

Manufacturers Record

Industry Construction



\$6.50 per Year.
Single Copy, 20 Cents.

Baltimore, Md.
SEPTEMBER 18, 1930

A Constructive Program of Municipal Improvement



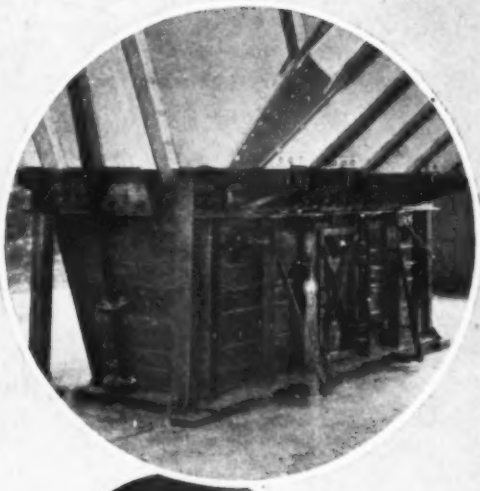
As we have repeatedly emphasized, now is the time to buy and build. Prices are in many cases below the cost of production; commodities and labor are plentiful, and better service can be obtained than heretofore. Municipalities, counties and states, as well as individuals, can secure more for money expended than will be possible when prices advance.

In this connection a most constructive movement looking to municipal improvement has been inaugurated by the Oklahoma City Chamber of Commerce, which wires the Manufacturers Record that it has approved a \$9,391,000 bond issue and urges immediate steps to call an election and begin actual construction work to provide employment for local citizens.

Improvements contemplated include waterworks, sewage disposal and sewers; viaducts; street widening; boulevard construction; convention hall; fair park buildings and improvements; comfort stations; city detention hospital; park expansion; fire stations and equipment, municipal repair shop and police signal system.

The variety and extent of the expansion program proposed offers opportunity for the employment of workers in many lines and for the purchase of materials and equipment covering many industries.

Other cities could well emulate the example set, by taking immediate steps to put under way necessary construction work to provide employment for local people. This is a point worthy of emphasis—the work contemplated in Oklahoma City will be done with local labor, the workmen being required to show registration certificates. This is done to protect the people of the community from an influx of unemployed from outside.

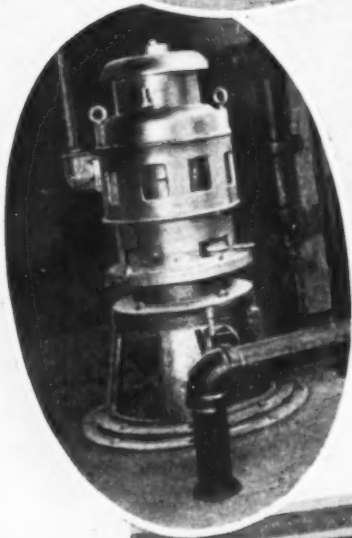


Pump Eliminates Rehandling of Ash

Power and process steam requirements of this towel manufacturing plant at Kannapolis, N. C., vary considerably and to take care of their peak loads they installed a 1360 H.P. Heine boiler, supplementing their other three boilers. This new boiler, fired by Combustion Pulverized Coal Equipment, is served by the Hydrojet System of Ash Removal.

The amount of ashes and the frequency of their removal naturally varies, but since the Hydrojet handles ash at the rate of a ton a minute, ash handling never presents a problem regardless of the load. One man easily handles the entire accumulation and in a few minutes time the refuse is discharged to fill, 150 feet away, without any rehandling whatever.

Ashes are fed from beneath the boiler and carried to the sump, by a high velocity water stream. Simultaneously, the ash laden water is pumped from the sump by an A-S-H Vertical Pump, the discharge of which is shown in the lower left hand corner of the large illustration. For further information, address the Allen-Sherman-Hoff Co., 223 S. 15th St., Philadelphia, Pa. Offices in Principal Cities.



HYDRO JET

Nothing Moves but the Ashes



at CANNON MILLS CO.

THE GUARANTEED WAY TO HARDEN CEMENT FLOORS

We Guarantee Every Sonneborn Job

If our inspection shows a floor is not so greatly deteriorated that a good hardening job is still possible—If Lapidolith, the original concrete floor hardener, is used—If a Sonneborn Service Crew applies Lapidolith—We guarantee such floors to remain wearproof and dustproof for a period of years, dependent on specific conditions of use.

YOU cannot afford to ignore such money-saving facts as these where the care of your concrete floors is concerned.

Since the discovery of Lapidolith by Sonneborn, over 952 million square feet of concrete floors all over the country have been Lapidolized—made harder, tougher, wear-proof, dustproof, washable—and for years.

Here's what one big industrial user writes: "Five years ago we treated all our floors—altogether about 80,000 square feet—with Lapidolith, and your product has done all that you claimed it would do as it has developed a marble like finish

which is not only dust proof and wear proof but also water and oil proof."

Lapidolith is a liquid chemical compound that penetrates the porous cement and binds the loose particles together into a hard and dustless mass. Easy to apply—any workman can do it with a long-handled brush. Dries over night. Once on, becomes a part of the floor itself and resists time, wear, chemicals, oil, and other floor-wrecking conditions.

Tell us the condition of your floors and what areas you have to treat. Send the coupon for complete detailed information and letters from satisfied users.

L. SONNEBORN SONS, INC., Dept. 34, 114 Fifth Avenue, New York

OTHER PROTECTING PRODUCTS BY SONNEBORN

HYDROCID COLORLESS

— for waterproofing exterior of exposed walls.

CEMCOAT

— an exterior or interior wall coating that stays white and can be washed endlessly.

LIGNOPHOL

— for preserving and wearproofing wood floors.

L. Sonneborn Sons, Inc.,

M.R.

Dept. 34, 114 Fifth Ave., New York.

We are interested in receiving information about your paint for—

Building Exteriors.....; Building Interiors.....;
Floors.....; Wood Work.....; Resisting Fumes.....;
Acid-Proof.....; Structural Steel.....; Boilers and
Stacks.....; Pipes.....; Machines.....; Engines
.....; Tanks.....

Name.....

Address.....

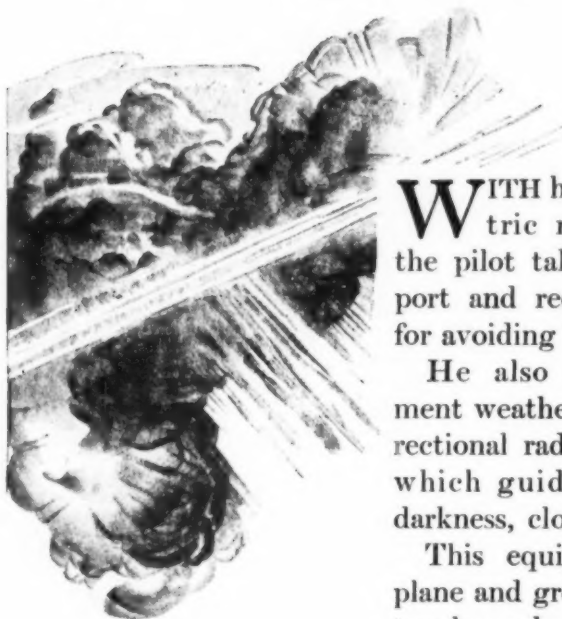
Company.....

Position.....



Out of the storm

—by telephone



WITH his Western Electric radio telephone the pilot talks with the airport and receives directions for avoiding the storm.

He also hears Government weather reports and directional radio beacon signals which guide him through darkness, clouds or fog.

This equipment, keeping plane and ground in constant touch, marks a great step ahead in flying. It helps to put the new mode of travel on a dependable, efficient basis—doing for air transportation what telegraph, telephone and wire-

less have done for railroads and steamship lines.

The airplane telephone is backed by more than 50 years' experience with problems of voice transmission.

It was designed by Bell Telephone Laboratories and tested under actual flying conditions in their own planes. It is made with the same care and skill as all the Western Electric apparatus used by the Bell System.

When you travel or ship goods by air, ask whether the plane is equipped with Western Electric Airplane Telephone.

MADE BY
THE MAKERS OF
BELL TELEPHONES



Western Electric

Aviation Communication Systems

U-Re-Lite All-Steel Distribution Groups

The Multumite Type



"Multum In Parvo"

Maximum Protection In Minimum Space

This Multumite Group is 13'-4" wide, 7'-10" high, and 3'-9" deep. Occupying only 50 square feet of floor space, it offers the following advantages:

1. Positive overload and short circuit protection of ten 1250 ampere circuits at 550 volts, 3 phase, 60 cycles.
2. Rupturing capacity of 40,000 amperes.
3. Absolute safety to operators—every live part enclosed in steel.

4. Remote solenoid control with hand control for emergency.
5. Disconnects on the line and load side of each breaker.
6. Disconnects for control circuit.
7. Easy inspection of breakers by opening doors.
8. Custom built—from standard parts—to exactly fit your requirements.

Get in touch with our nearest representative for data on a Multumite Group to protect and control your circuits.

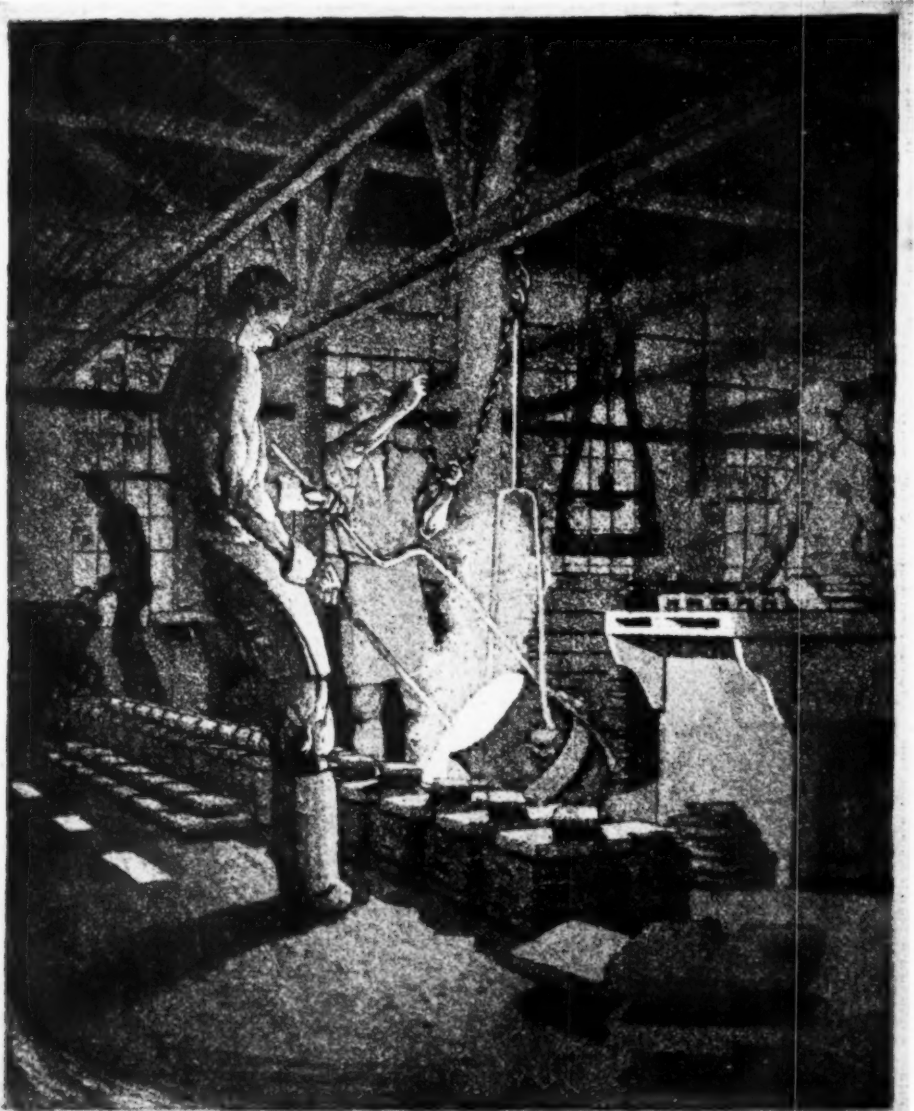
I-T-E CIRCUIT BREAKER COMPANY, 19th and HAMILTON STS., PHILADELPHIA

Birmingham, Crawford Bldg.; Boston, 201 Devonshire; Buffalo, Ellicott Sq. Bldg.; Chicago, 333 N. Michigan Ave.; Cincinnati, Union Trust Bldg.; Cleveland, Terminal Tower Bldg.; Denver, Tramway Bldg.; Detroit, Penobscot Bldg.; Duluth, Providence Bldg.; Kansas City, Midland Bldg.; Los Angeles, 106 W. 3rd; Minneapolis, Plymouth Bldg.; Montreal, 151 LaGauchetière St. West; New Orleans, 708 Girod St.; New York, 12 E. 41st; Omaha, Electric Bldg.; Philadelphia, 1505 Race; Pittsburgh, Park Bldg.; St. Louis, Bank of Commerce Bldg.; San Francisco, Call Bldg.; Seattle, 802 33rd Ave.; Toronto, 149 Adelaide St. E.; Vancouver, 500 Beatty Street; Winnipeg, National Carriage Office Building.

I-T-E PROTECTION

U-RE-LITES ~ I-T-E CIRCUIT BREAKERS

Pouring the metal at correct temperatures promotes sound, strong castings for Jenkins Valves.



Standard equipment the apparatus buyer knows for its quality

Apparatus buyers know Jenkins Valves. For 66 years Jenkins have been known for quality wherever valves are used. Jenkins installed as standard equipment on apparatus contribute definitely to the buyers' impression of "quality throughout."

Pouring the metal is just one step in the making of a Jenkins Valve. But, like every other step, it is important in determining the strength and quality of the finished valve. For this reason, the greatest care is exercised. Metal is poured at the temperature which assures the best castings. The use of pyrometers provides an accurate check on the temperature. Constant vigilance prevails.

Manufacturers are invited to consult Jenkins Engineering Advisory Service when con-

fronted with the problems of valve selection. Jenkins Bros., 80 White St., New York; 524 Atlantic Ave., Boston; 133 No. 7th St., Philadelphia; 646 Washington Blvd., Chicago; 1121 No. San Jacinto, Houston. Jenkins Bros., Ltd., Montreal, London.

Jenkins

VALVES

Since 1864

With all his modern instruments



he will dodge a fog if he can!



TO realize the important part played by clear and accurate vision in nearly every act of work that men perform, consider the aviator.

Unlike the thousands who are daily called upon to work in improperly lighted industrial plants, he can leave nothing to chance. He *must* see clearly at what angle he is leaving the ground. So a climb indicator helps him see. He *must* see how low or high he is flying. So an altimeter helps him see. He must see whether he is flying straight or turning. So there's the turn and bank indicator — again to *help him see*. And with all these and still other instruments, he will not start up in a fog unless he's pretty sure he can safely fly through it or dodge it.

When the excuse, then, for inadequate or improper illumination in an industrial plant is that men do so much work automatically, without the need

Science says the cool yellow and green rays of the spectrum are the rays by which we see best. The remarkable seeing power of Cooper Hewitt light is accounted for by the composition of its spectrum — over 90% yellow-green.

for good visual guidance, the answer is this: No manufacturer would depend on the truth of that statement if, as with the aviator, his workers' ability to see sharply and clearly were a matter of life or death instead of the time, production and profit-loss that throughout industry it has proved to be.

Since about 70 per cent of every workman's working acts are guided and timed by vision, it is no wonder that Cooper Hewitt mercury-vapor light — the modern better-than-daylight illumination — has helped reduce accidents and waste, has improved quality, increased efficiency and added to profits

generally in the scores of leading industrial plants where it is installed.

The scientific reasons why Cooper Hewitt light achieves these results are simply explained in a booklet, "Why Cooper Hewitt light is Better than Daylight." Yours for the asking. General Electric Vapor Lamp Co., Hoboken, N. J.

Blue and violet, which have comparatively little seeing power, comprise less than 10% of Cooper Hewitt light.

Join us in the General Electric Hour, broadcast every Saturday evening on a nation-wide N. B. C. network.

GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

[See next page]

How much do YOU *pay for daylight?*

Does large window area in the so-called daylighted factory save illumination costs? Many owners and managers at one time thought so. But today great numbers of them know better. They have learned from experience that daylight is not the best light—and, when the cost is properly figured, it is far from inexpensive.

❧

Many of these plants now use Cooper Hewitt mercury-vapor illumination exclusively—*all day, every day*. For reasons, some of which are given on the reverse side of this page, they prefer Cooper Hewitt light to daylight as a light to see by. And the following are a few of the reasons why they find Cooper Hewitt light less expensive:

❧

Daylight varies considerably, not only during the day, as when it's dim in early morning and late afternoon hours; but during the year, as on cloudy and rainy days and the short days of fall and winter. Indeed, U. S. Weather Bureau reports indicate that, if there is to be adequate lighting in the average factory, artificial light must reinforce or replace daylight more than half the total number of working hours.

❧

Then to make the most of daylight when it is good, windows must be kept clean—a cost item that runs into hundreds of dollars a year for many plants. In mid-summer, too, the hot, glaring sun must be kept out, so often windows must be painted—or awnings or curtains installed and kept ad-



BETTER THAN DAYLIGHT

justed. The ground rental value of the extra land a single story daylighted shop must cover is still another item of cost—as is also the great heat loss through windows in winter. Snow accumulation in the troughs of saw-tooth structures is another inconvenience and expense.

❧

“Give me a few windows for ventilation purposes only or a mechanical ventilation system and—Cooper Hewitt light,” says a manufacturer, “and my competitors can stick to daylighted plants as long as they like.”

❧

In this connection remember that Cooper Hewitt lamps give a small amount of ultra-violet radiation—a decided health benefit—with no harmful effects of any kind. General Electric Vapor Lamp Co., 819 Adams St., Hoboken, N. J.

*JOIN US in the General Electric Hour broadcast every
Saturday evening on a nation-wide N. B. C. Network*

GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

(See preceding page)

466 © G. E. V. L. Co 1930

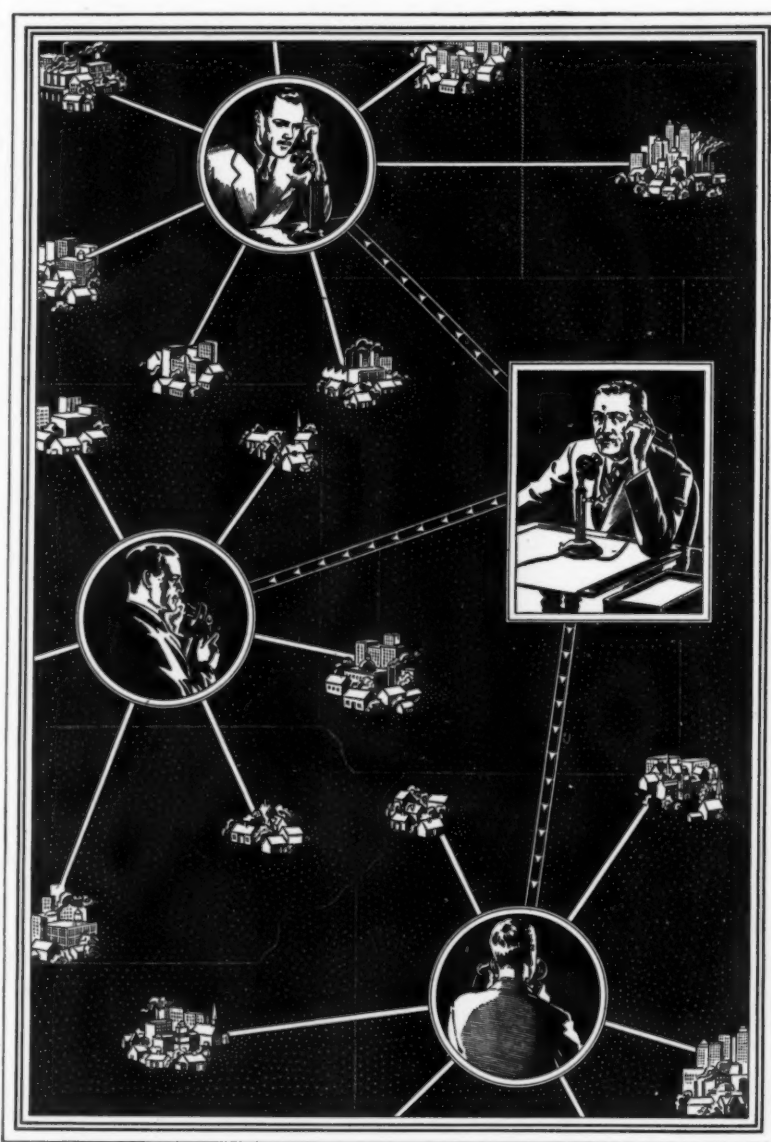


Developing Business by Telephoning customers from Key Towns

THE Key Town Plan of telephoning is so flexible that it will fit practically any sales program. A building materials company needs to keep in close touch with customers over a wide area in four Western states. Its salesmen visit certain key cities in person and telephone those nearby. In this way, they can contact each customer more frequently and at less expense. Learn beforehand of new building projects. Handle orders more promptly. Communicate with the home office on new developments accurately and without delay.

A rubber footwear company co-ordinates its Key Town activities with the weather. Representatives maintain close contact with customers regularly in person. Then when stormy weather breaks, they immediately telephone, using Sequence Calling Lists to put the calls through in quick succession. The result is a rush of orders.

The Key Town Plan can be custom-fitted to your business. The local Bell Business Office will gladly have a representative show you how it will build business and cut selling costs. Telephoning is inexpensive. Typical station-to-station day rates: Philadelphia to New York, 50c. Chicago to Seattle, \$6.50. Atlanta to St. Louis, \$1.95. For all inter-city business, the telephone is *Quick . . . Effective . . . Convenient.*



ALOXITE REDMANOL WHEELS

REG. U.S. PAT. OFF.
BRAND



TWO CARBORUNDUM CONTRIBUTIONS TO THE METAL TRADES

TO meet the demand for greater grinding tonnage—for lowered wheel costs Carborundum research and resource have given to industry the Aloxite Brand Redmanol Wheel—a super high-speed wheel.

And its grit, grade, bond and structure—as well as the very characteristics of its grain and grain structure—are so controlled as to insure duplication.

It is a wheel that has gone far in making high-speed foundry grinding high production grinding.

Glad to conduct tests in your plant to prove its ability to increase production—cut grinding costs

(CARBORUNDUM AND ALOXITE ARE REGISTERED TRADE MARKS OF THE CARBORUNDUM COMPANY)

The CARBORUNDUM Company

REG. U. S. PAT. OFF.

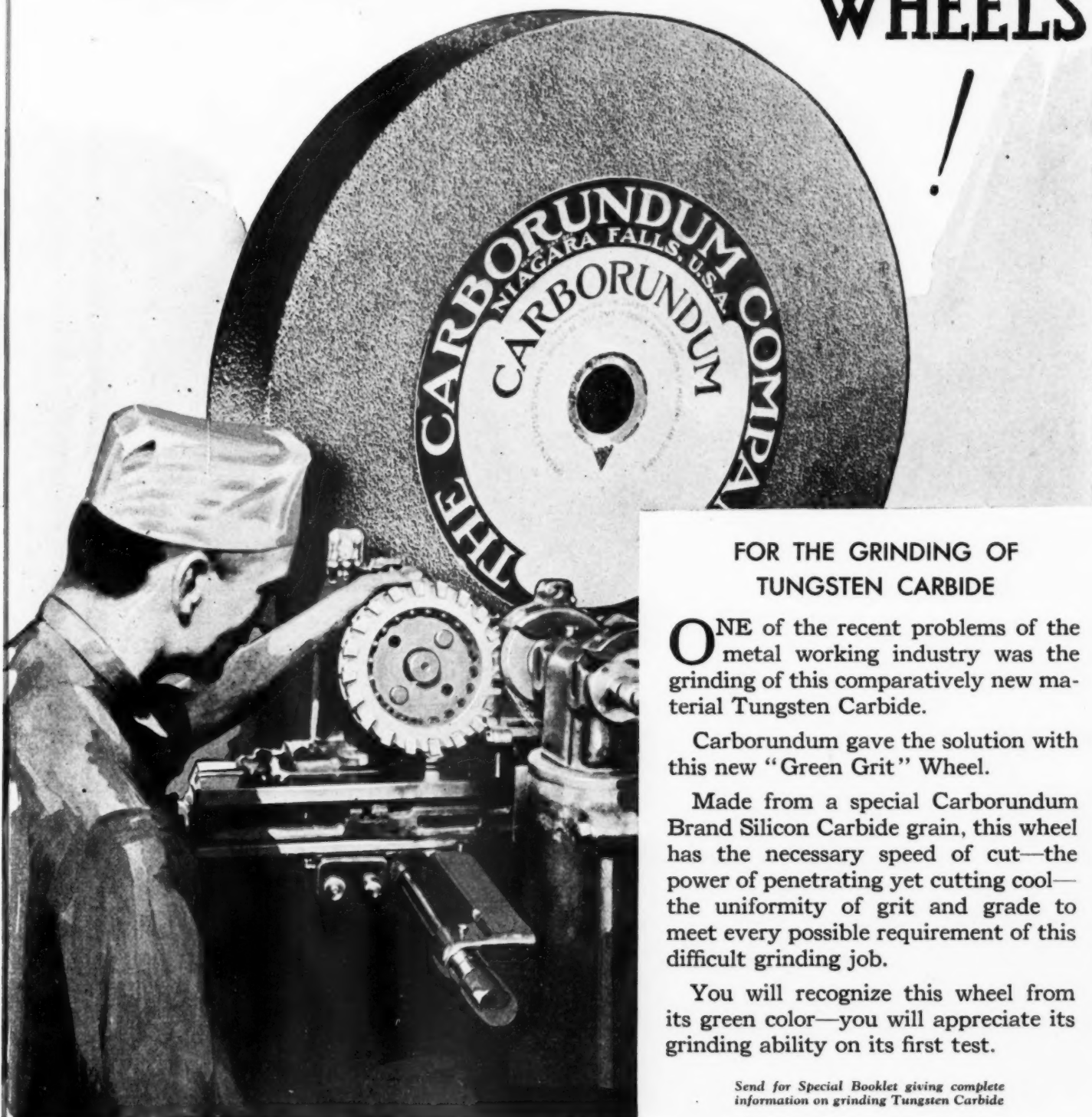
SALES OFFICES AND WAREHOUSES IN NEW YORK / CHICAGO / PHILADELPHIA / BOSTON / CLEVELAND
CANADIAN CARBORUNDUM CO., LTD., NIAGARA FALLS, ONT. THE CARBORUNDUM CO., LTD.

CARBORUNDUM GREEN-GRIT WHEELS

REG. U.S. PAT. OFF.

BRAND

{ AT THE NATIONAL METAL EXPOSITION, SPACE 53 }



FOR THE GRINDING OF TUNGSTEN CARBIDE

ONE of the recent problems of the metal working industry was the grinding of this comparatively new material Tungsten Carbide.

Carborundum gave the solution with this new "Green Grit" Wheel.

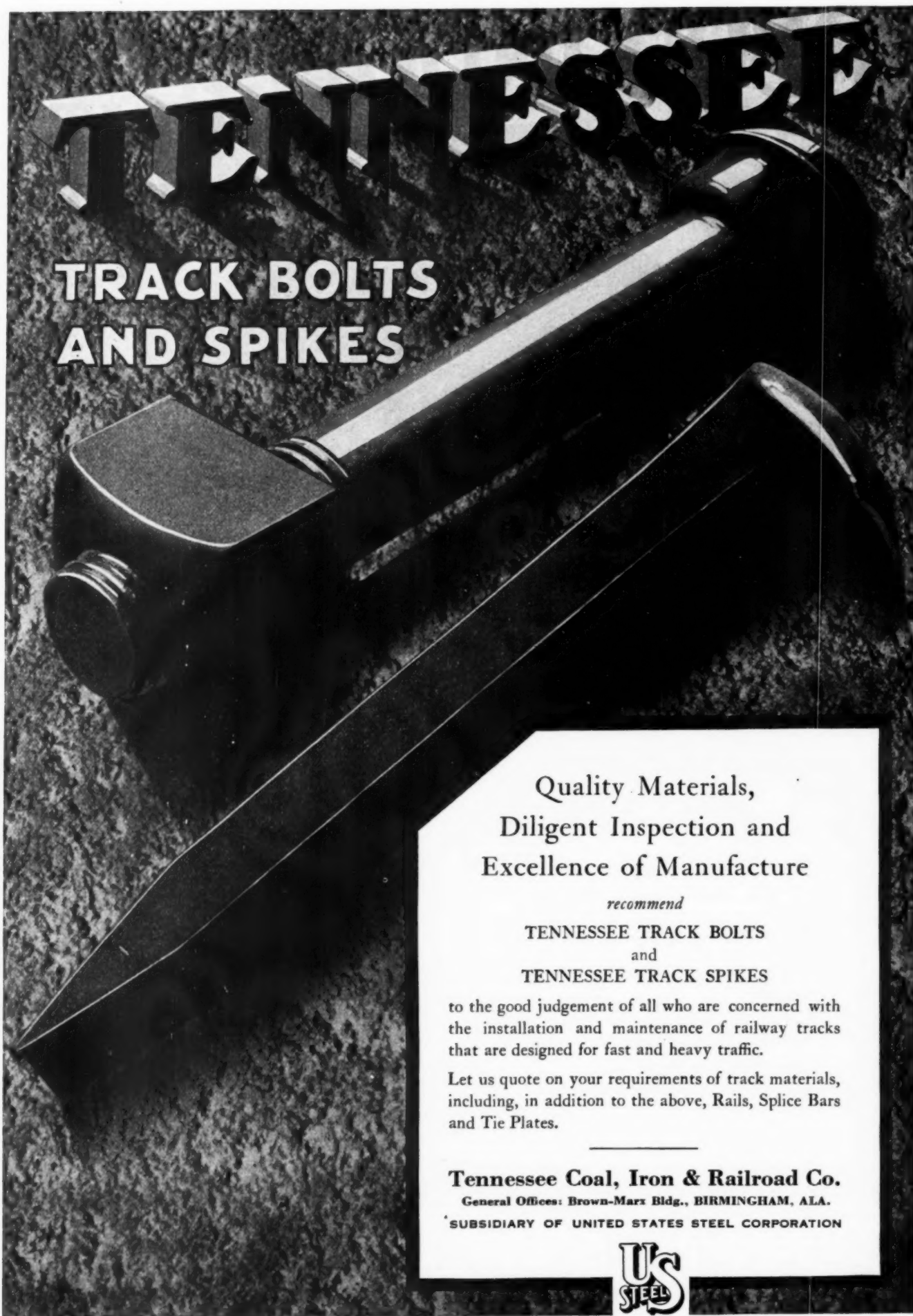
Made from a special Carborundum Brand Silicon Carbide grain, this wheel has the necessary speed of cut—the power of penetrating yet cutting cool—the uniformity of grit and grade to meet every possible requirement of this difficult grinding job.

You will recognize this wheel from its green color—you will appreciate its grinding ability on its first test.

Send for Special Booklet giving complete information on grinding Tungsten Carbide

Niagara Falls, New York, U. S. A.

DETROIT / CINCINNATI / PITTSBURGH / MILWAUKEE / GRAND RAPIDS / TORONTO, CANADA
MANCHESTER, ENGLAND / DEUTSCHE CARBORUNDUM WERKE, REISHOLZ BEI DUSSELDORF, GERMANY

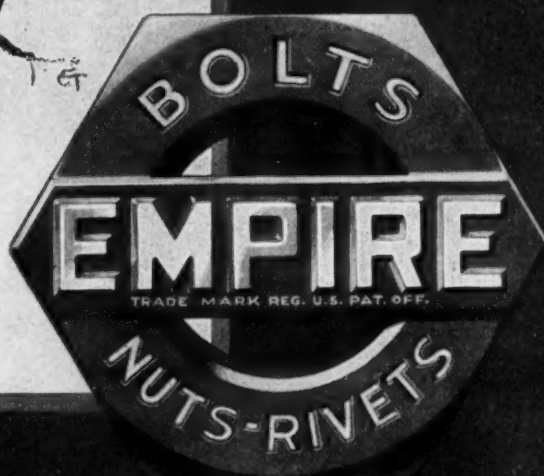


TENNESSEE
TRACK BOLTS
AND SPIKES

Quality Materials,
Diligent Inspection and
Excellence of Manufacture
recommend
TENNESSEE TRACK BOLTS
and
TENNESSEE TRACK SPIKES
to the good judgement of all who are concerned with
the installation and maintenance of railway tracks
that are designed for fast and heavy traffic.
Let us quote on your requirements of track materials,
including, in addition to the above, Rails, Splice Bars
and Tie Plates.

Tennessee Coal, Iron & Railroad Co.
General Offices: Brown-Marx Bldg., BIRMINGHAM, ALA.
SUBSIDIARY OF UNITED STATES STEEL CORPORATION

**US
STEEL**



YOU can buy steel to any standard specification. You can buy good bolt, nut and rivet making machinery. Then all you've got to do to make Empire bolts, nuts and rivets is to get hold of an organization of men most of whom have been working together from thirty to fifty years and many of whose fathers and grandfathers were working in the same plant
MEN make institutions.

RUSSELL, BURDSALL & WARD
BOLT AND NUT COMPANY

ROCK FALLS, ILL.

PORT CHESTER, N.Y.

CORAOPOLIS, PA.

PHILADELPHIA • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES • SEATTLE • PORTLAND



The Wet Issue and Steel Products

FROM the time of Noah's Ark to the Eighteenth Amendment there has always been a wet issue—water versus man-made works.

Battleships and barn roofs alike have been fair game. But now Granite City Copper Bearing Steel—rust-resisting, corrosion-resisting—offers a new degree of protection against these forces of waste and depreciation.

If the steel product you use

or fabricate for sale must resist weather and the elements, it will pay you to investigate Granite City Copper Bearing Steel. Exhaustive tests show that it lasts almost three times as long as ordinary steel without copper content—yet the cost is only about 7% more.

A book of facts on copper-bearing steel will be mailed free on request.

Chicago & Dallas
Kansas City
Los Angeles
Memphis



St. Louis & St. Paul
Seattle
San Francisco
Salt Lake City

GRANITE CITY STEEL CO. GRANITE CITY ILLINOIS
Galvanized, Blue Annealed and Black Sheets - Plates and Tin Plate

CARNEGIE BEAMS



Pictured here is the recently completed grade separation of the Southfield Road in Detroit and the Detroit & Ironton Railroad. 30" Carnegie Beams formed the floor system of the span over the roadway and 18" Carnegie Beams over the two sidewalks.

A SIMPLE and economical solution of the problems of highway and maintenance of way engineers engaged in grade separation work is offered by Carnegie Beams.

The series comprises a full range of beam, girder and column sections of high efficiency as measured by the ratio of section modulus to the weight. Heavy sections, up to 36" deep and designed primarily for heavy loads on long spans, offer a wide selection of flange widths and section moduli as high as 1102.7 inches³. They eliminate the fabrication necessary in built-up plate and angle girders.

Carnegie Beams are characterized by flanges of uniform thickness without taper. The elimination of internal flange slope provides for simple connections and ease of fabrication and erection.

Our engineers are ready to help you on any problems involving your steel requirements

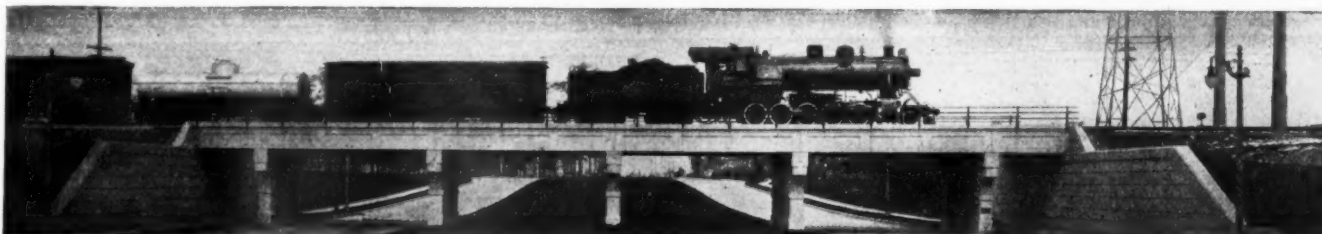
CARNEGIE STEEL COMPANY - PITTSBURGH, PA.

Subsidiary of United



States Steel Corporation

85



McClintic-Marshall Company

Steel Bridges *and* Buildings
Tanks, Barges, Pipe, Transmission Towers
and Plate Work

General Offices:- PITTSBURGH, PA.

OFFICES IN PRINCIPAL CITIES



Mountain State Steel Foundries

ELECTRIC

Steel and Alloy Casting Specialists

Eight ounces to
Five hundred pounds

PARKERSBURG, W. VA.

GOLD SEAL LATHES



20x10 Lathe
\$1025.00 F. O. B.
Cincinnati

All types
12 to 20 inch swing

The Sebastian Lathe Company, 2964 Culvert St.
Cincinnati, Ohio

ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each

Quantity Production A Specialty

Nickel, Chrome and Other Alloy

Quick Delivery

Inquiries Solicited

CRUCIBLE STEEL CASTING COMPANY

LANSDOWNE, DELAWARE COUNTY, PA.

RICHMOND STRUCTURAL STEEL CO.

ORNAMENTAL IRON — GREY IRON CASTINGS

RICHMOND, VA.

BRANCH
NORFOLK, VA.

DEEMER STEEL CASTING CO.
DEPENDABLE CASTINGS
Shipped PROMPTLY
PATTERN and MACHINE WORK
CARBON MANGANESE ALLOY
DEEMER STEEL CASTING CO.
NEW CASTLE, DELAWARE

EXCELSIOR All Standard and Special Shapes
FIRE **ALABAMA CLAY PRODUCTS CO.** **BRICK**
BIRMINGHAM ALABAMA

QUALITY PIG IRON

PLUS

Intelligent Cupola Service

SLOSS-SHEFFIELD STEEL & IRON CO.

BIRMINGHAM, ALA.



Patterson-Built

TACKLE BLOCKS

A reliable block to meet every requirement.

Write for Catalog No. 22

W. W. Patterson Co., 57 Water St., Pittsburgh, Pa.

Flat Wire

John A. Roebling's
Sons Company
Trenton, N. J.



Structural Steel

Buyers of structural steel save money by specifying Ingalls. Location, huge production, and careful workmanship, give us the advantage.

ASK FOR QUOTATION
on bridges, Ingalls Truss (for fireproof floors and roofs), standard buildings, etc.

THE INGALLS IRON WORKS CO.
Plants and Executive Offices BIRMINGHAM, ALA., VERONA, PA. (in the Pittsburgh District)
Branch Offices: New York, Atlanta, Tampa, New Orleans.

for STEEL

THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH
Structural Steel Shapes, Beams,
Channels, Angles, and Ship Shapes

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

OFFICES:
22 S. 15th St., Philadelphia 30 Church St., New York
Munsey Building, Washington 110 State St., Boston
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London

THE PHOENIX BRIDGE CO.

Engineers, Fabricators, and Erectors
Bridges and Other Structures of Steel
CAPACITY 60,000 TONS

Works and Engineering Office: Phoenixville, Pa.

CAROLINA STEEL & IRON COMPANY

GREENSBORO, N. C.

Sales Office:—709 Nissan Bldg., WINSTON-SALEM, N. C.

Structural Steel FOR Buildings and Bridges

Capacity 1000 Tons per Month. 3000 Tons in Stock
The Largest Steel Fabricators in the Carolinas

ATLANTIC BRIDGE COMPANY

ENGINEERS - CONTRACTORS - ERECTORS
BRIDGES - FOUNDATIONS - BUILDINGS
GREENSBORO, NORTH CAROLINA



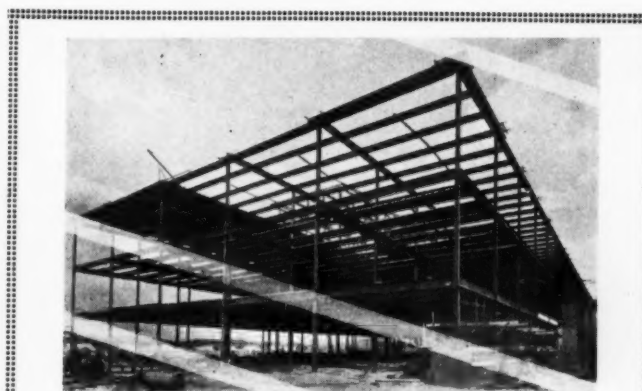
CHAMPION BRIDGE COMPANY

WILMINGTON, OHIO
Manufacturers of
Bridges and Structural Work
Southern Offices:
ATLANTA, GA. FORT LAUDERDALE, FLA.

ROANOKE IRON & BRIDGE WORKS, Inc.

Structural and Ornamental Iron
Wrought Steel Fences
Gray Iron Castings
FROM 1 TO 10,000 LBS.

Write for Estimates ROANOKE, VA.



Goodyear Extends South

FOR good and sufficient reasons the Goodyear Tire & Rubber Co. has stepped up considerably its operations in Georgia and Alabama. Its recently built plant at Rockmart, Ga., shown above, is typical of the very substantial construction used.

We furnished and erected the 2275 tons of steelwork for this Rockmart plant, with Robert & Company, Atlanta, Georgia, as the Architects and Engineers.

VIRGINIA BRIDGE & IRON CO.
Roanoke Birmingham Memphis Atlanta New Orleans
New York Los Angeles Charlotte Dallas El Paso

VIRGINIA BRIDGE

STEEL STRUCTURES



BELMONT IRON WORKS

PHILADELPHIA NEW YORK EDDYSTONE
Southern Sales Office, Charlotte, N. C.
Engineers Contractors Exporters
Structural Steel
Complete Industrial Buildings

CONVERSE BRIDGE & STEEL CO.

STRUCTURAL STEEL

For
Industrial Buildings, Mines, Refineries,
and the Building Trade
CHATTANOOGA TENNESSEE

Bristol Steel & Iron Works, Inc.

STRUCTURAL STEEL FOR BRIDGES, BUILDINGS
AND ALL INDUSTRIAL PURPOSES
STEEL PLATE & MISCELLANEOUS IRON WORK
BRISTOL, VA.—TENN.



NASHVILLE BRIDGE COMPANY

Engineers—Fabricators and Erectors
of Bridges. Building, Transmission
Towers and other Types of Structural
Steel.
NASHVILLE, TENN.



GRASSELLI

GRASSELLI FORMIC ACID

90% Commercial

A high-grade product suitable for all purposes where Commercial Formic is used.

We shall be glad to write you or send one of our representatives to consult with you.

Write for booklet showing complete line of Grasselli Industrial Chemicals.

THE GRASSELLI CHEMICAL CO.
INCORPORATED CLEVELAND

New York Office and Export Office: 347 Madison Ave.

Branches and Warehouses:



ALBANY	CHARLOTTE	MILWAUKEE	PATERSON
BIRMINGHAM	CHICAGO	NEWARK	PHILADELPHIA
BOSTON	CINCINNATI	NEW HAVEN	PITTSBURGH
BROOKLYN	DETROIT	NEW ORLEANS	ST. LOUIS
			ST. PAUL

LOS ANGELES: 363 New High St. SAN FRANCISCO: 576 Mission St.

*Represented in Canada by CANADIAN INDUSTRIES, Ltd.,
Heavy Chemicals Division.....Montreal & Toronto.*

GRASSELLI GRADE
A Standard Held High for 91 Years

42 years old ... yet vacancies never exceed 10%

The Drexel Building in Philadelphia is one old building that manages to compete successfully with the imposing new structures that rise around it. The range of occupancy usually runs between 92 and 96 per cent—though the vacancy average in Philadelphia is close to 18 per cent.

One reason for this high occupancy is that the Drexel Building has never been allowed to become obsolete. The owners have never been afraid to spend money liberally for forward-looking improvements. Recently, for example, the management adopted the far-sighted policy of furnishing linoleum for all office floors *at the expense of the building*.

An investigation of Bonded Floors service and Bonded Floors materials (Sealex Linoleum and Sealex Treadlite Tile) led to the awarding of this important contract to an Authorized Contractor of Bonded Floors.

Handsome, colorful and up-to-date looking—these floors are inexpensive to buy and can readily be laid right on top of shabby, old floors. Write Dept. M for details of our nation-wide expert installation service.

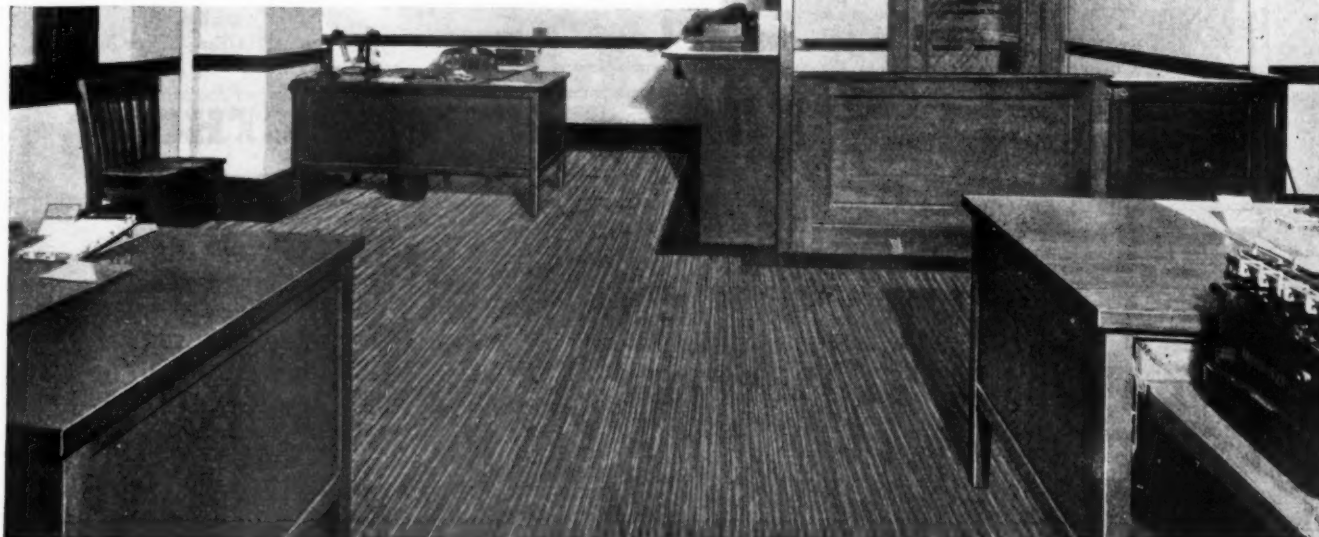
CONGOLEUM-NAIRN INC. General Office: KEARNY, N. J.

The Drexel Building management has combined the advantages of a comfortable, attractive, tenant-pleasing floor with the maintenance economy of standardized, easy-to-clean floor-surfaces.

BONDED FLOORS



Bonded Floors are floors of Sealex Linoleum and Sealex Treadlite Tile, backed by a Guaranty Bond issued by the U. S. Fidelity and Guaranty Company. Authorized Contractors of Bonded Floors are located in principal cities.





MILCOR Skylights

The Torpedo Ventilating Skylight is one of the most popular types. Ventilation is regulated easily and quickly by movable shutter. Special fire-proof feature.

FUSIBLE LINK

Skylights and ventilators of every variety are made by Milcor to meet all requirements. The nearest Milcor office will gladly give you full details and quote on your requirements. Send for the Milcor Skylight booklet.

MILCOR STEEL COMPANY
(formerly Milwaukee Corrugating Co., Milwaukee, Wis. and The Eller Mfg. Co., Canton, Ohio)
Main Offices: 1451 Burnham St., Milwaukee
Plants at Milwaukee, Wis., Canton, Ohio, La Crosse, Wis., Chicago, Ill. and Kansas City, Mo.
Sales Offices: New York, 418 Pershing Sq. Building; Boston, Mass., 726 Little Building; Atlanta, Ga., 207 Bona Allen Building; Minneapolis, Minn., 642 Bidra Exchange Building; Little Rock, Ark., 104 W. Markham Street

NASHVILLE HARDWOOD FLOORING CO.
NASHVILLE, TENNESSEE
Manufacturers of
"ACORN BRAND"
OAK, MAPLE and BEECH FLOORING
Capacity 100,000 feet per day
Branch Warehouse: JACKSONVILLE, FLORIDA
Union Terminal Warehouse Building

WATER PURIFICATION EQUIPMENT
of every type for every purpose

INTERNATIONAL FILTER CO.
HEADQUARTERS AND GENERAL OFFICE
333 WEST 25th PLACE
CHICAGO
NEW YORK PITTSBURGH CANADIAN INTERNATIONAL FILTER CO., LTD., TORONTO

THE CUTLER MAIL CHUTE

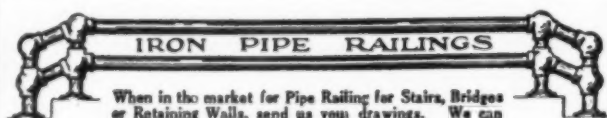
In its perfected form—the outcome of long experience, designed to meet the requirements of public use under Postoffice Regulation. Simple and substantial in design and construction, durable in finish, with an artistic quality appreciated and much commended by Architects. * * * Details, information on request.

THE CUTLER MAIL CHUTE COMPANY
General Offices and Factory ROCHESTER, N. Y.

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY
604 Columbia Avenue Darby, Pennsylvania



PIPE RAILING CONSTRUCTION CO., Long Island City, New York



Sanitary and Janitors' Supplies Sweeping Compounds

CHEMICAL PRODUCTS
LLOYD T. CLARK, Manufacturer and Distributor
Southern Pines, N. C.

THE GEORGIA MARBLE COMPANY

Producers and Manufacturers of
GEORGIA MARBLE
Tate, Georgia
Atlanta Chicago Cleveland Dallas New York

Manufacturers Of
ELECTRIC AND HAND POWER **ELEVATORS** FREIGHT AND PASSENGER
DUMB WAITERS
MILLNER COMPANY
St. Louis, Mo.

GUNITE METHOD

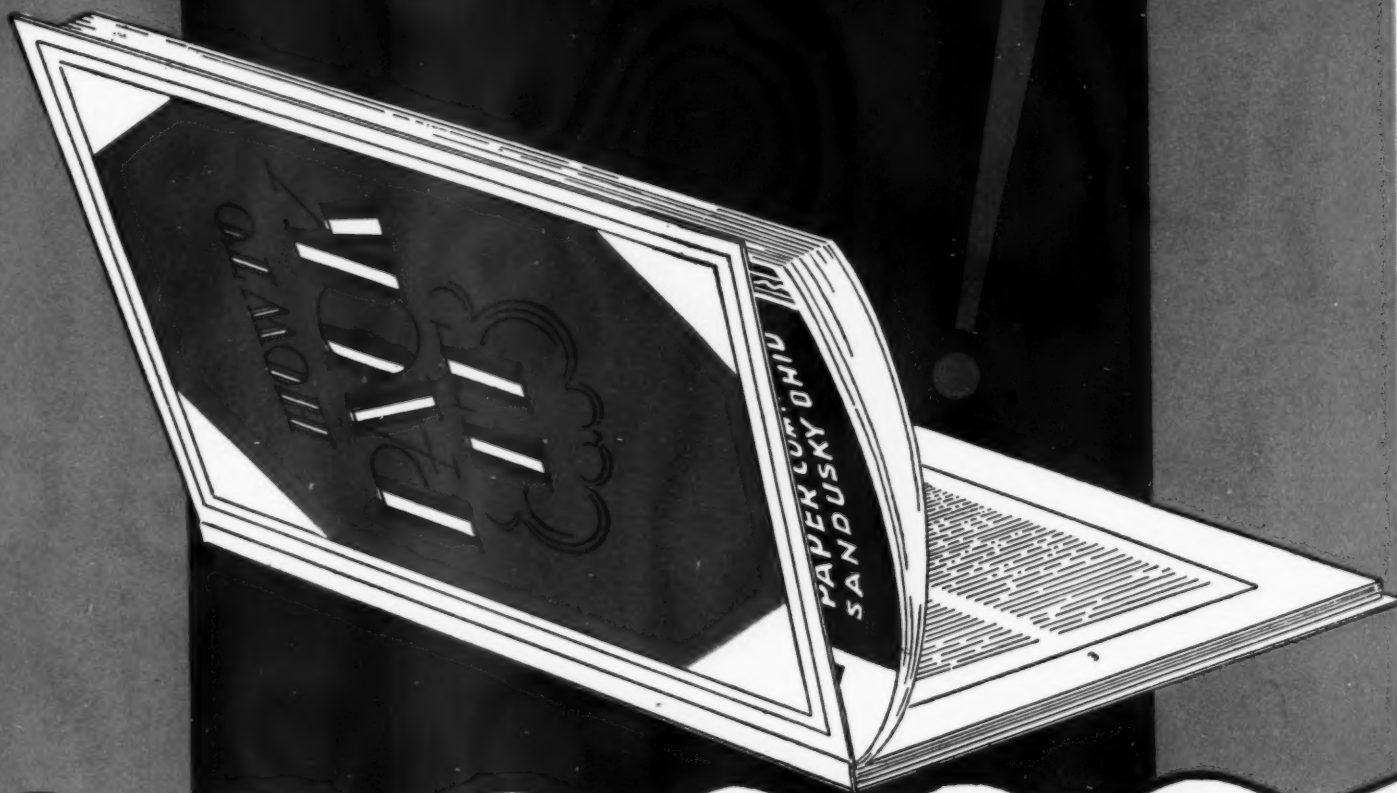
Specialists in
CEMENT GUN CONSTRUCTION
Contracts Executed Anywhere
GUNITE CONCRETE AND CONSTRUCTION CO.
BARCLAY A. GREENE, President
1301 Woodswether Road, Kansas City, Mo.
Branch Offices: St. Louis, Mo.; Chicago, Ill.; Birmingham, Ala.; Dallas, Tex.; La Feria, Tex.

AMERICAN ELEVATORS
PASSENGER AND FREIGHT
AMERICAN
ELEVATOR and MACHINE CO., INC.
Established in 1898
LOUISVILLE, KENTUCKY

Cement-Gun Construction Work THE RUST ENGINEERING CO.

Engineers and Contractors on all kinds of
Cement-Gun Work
WOODWARD BUILDING, BIRMINGHAM, ALA.
New York Pittsburgh Washington Chicago

GET THIS
BOOK!



IT POINTS THE WAY TO A
4-FOLD SAVING

REDUCED LABOR COST OF PACKING
REDUCED TRANSPORTATION COST
REDUCED COST OF BOXES
REDUCED DAMAGE IN SHIPPING

H & D PROPER PACKAGING

provides a 4-FOLD SAVING

THOUSANDS of shippers have found the way to packaging economy through H & D Package Engineering Service. This service has a four-fold saving.

First, the H & D corrugated fibreboard box is lower in cost. *Second*, the speed and convenience of handling H & D containers have materially reduced packing labor costs. *Third*, lighter weight effects a large reduction in transportation costs. *Fourth*, the cushioned walls of H & D properly designed containers materially reduce losses from damage.



50 H & D Package Engineers are ready to make sure that your packaging is four-square with modern shipping requirements. Their recommendations place no obligation on you.

"How to Pack It" is a new H & D booklet that shows how you can get the benefit of proper packaging. We'll gladly send you a copy if you will return the coupon below.

THE HINDE & DAUCH PAPER COMPANY
336 DECATUR STREET SANDUSKY, OHIO

Western Address:

KANSAS CITY FIBRE BOX CO.
PACKERS STATION KANSAS CITY, KANSAS

Canadian Address:

KING STREET SUBWAY AND HANNA AVE. TORONTO

HINDE & DAUCH

corrugated
fibre

SHIPPING BOXES

THE HINDE & DAUCH PAPER COMPANY
336 Decatur Street, Sandusky, Ohio

Please send me a copy of "How to Pack It."

Signature
Company Name.....
We Pack.....
Address.....
City.....State.....



GET THIS BOOK

← here's the coupon

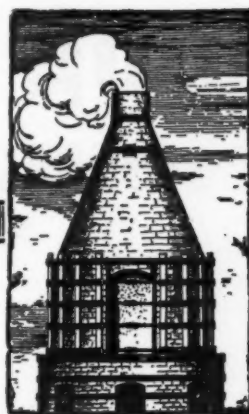
HOUSTON, TEXAS

Population 1920—136,000

Population 1930—290,000

*That's "Progress"***KIRBY LUMBER COMPANY**Hardwood Production 1920—None
Hardwood Capacity 1930—110 Million Ft.Including Oak Flooring, Interior Trim and
Mouldings and "True to Size" Hardwood
Dimension—At the same time maintaining a Yellow
Pine capacity of 225 million feet annually.*That is also "Progress"***KIRBY LUMBER COMPANY***"A wood for every Purpose"*

HOUSTON, TEXAS

**WALTER BATES STEEL CORPORATION**
GARY INDIANA.**Kerlow Steel Floors**222-238 CUMBER AV.
JERSEY CITY, N. J.**Non-Slipping**

©

Atlanta Terra Cotta Stock Designs

facilitate the use of Terra Cotta on the smaller buildings where a necessity exists for low costs and the shortest deliveries permitted by good manufacturing practices.

Atlanta Terra Cotta Stock Designs are offered in catalog form showing by line drawings and elevations in color, complete and attractive designs which can be adapted to the needs of almost any type of business.

The catalog further offers a wide variety of Inserts, Running Ornaments, Architraves and Mouldings, Name, Date and Decorative Panels, Pilaster Caps and Bases, Cornices and Copings which can be incorporated in your own plans.

Catalog No. 6, a recent and enlarged edition is now available for distribution. A request on your business stationery will bring a copy.

Atlanta Terra Cotta Company

Glenn Building

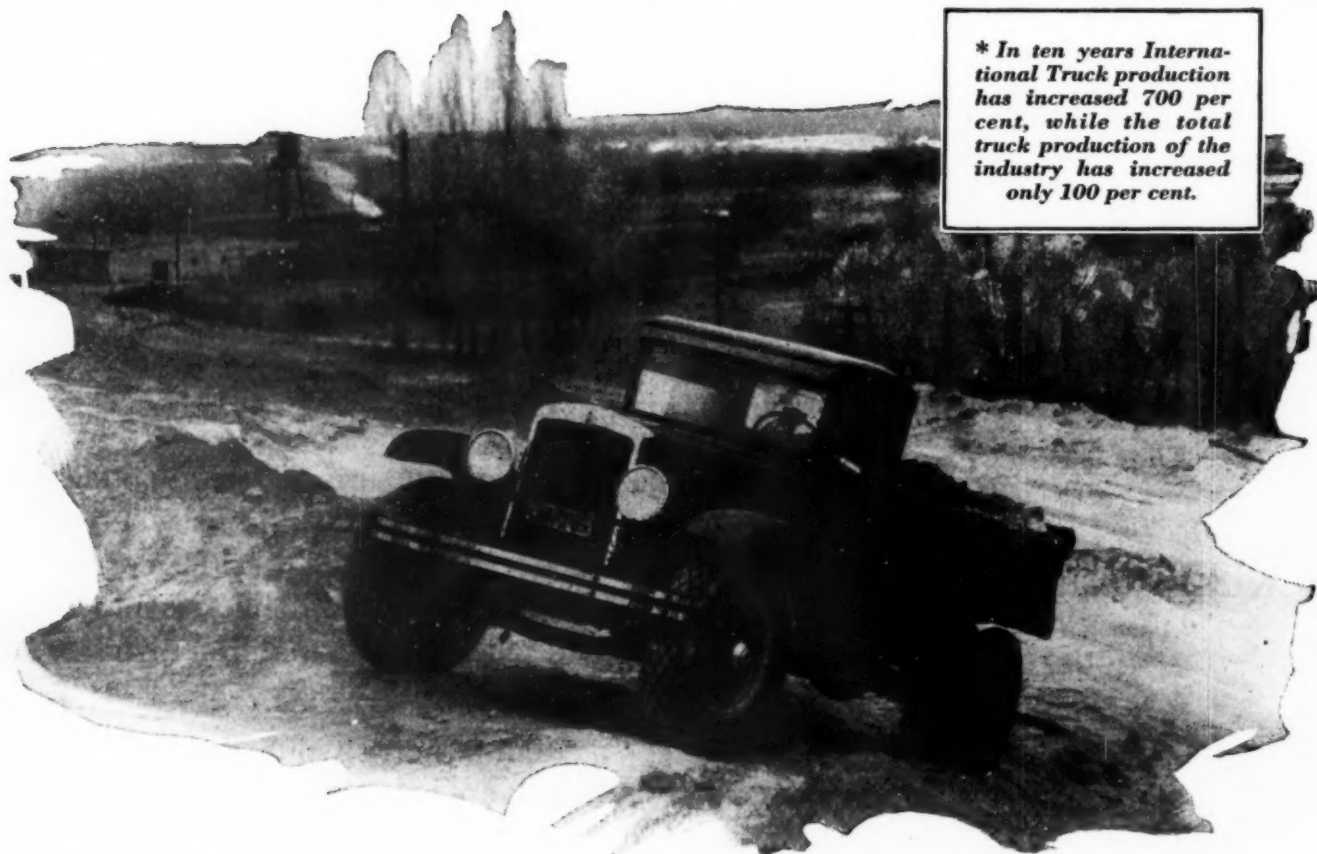
Atlanta, Georgia

Factory at East Point, Georgia

Southern Factory of
Atlantic Terra Cotta Company
19 West 44th Street
New York

Southwestern Office
A. P. Clark, District Manager
Praetorian Building
Dallas, Texas

Topping a Remarkable Record!



** In ten years International Truck production has increased 700 per cent, while the total truck production of the industry has increased only 100 per cent.*

CLIMAXING International Harvester's record* of extraordinary growth and progress, comes the introduction of four new 6-cylinder Speed Trucks . . . 1½, 2, and 3-ton capacities. All have the same slim, sleek, speedy appearance, which is so much in demand today. And beneath their handsome exteriors are features of design and construction which contribute to improved performance and operating economy.

In these new models, sound engineering, extensive manufacturing facilities, and highly skilled workmen combine to advance the high standards set by other International Trucks.

The requirements of various classes of service are taken care of with a wide choice of wheelbase lengths, providing for the use of van, stake, panel, bus, dump, and tank bodies.

International Harvester branches and dealers now have these new Speed Trucks on display. Visit the nearest showroom and see for yourself the features of each model. A convincing demonstration will be arranged on request.

INTERNATIONAL HARVESTER COMPANY

606 So. Michigan Ave.

of America
(Incorporated)

Chicago, Illinois

Model A-3

—1½ tons

6 cylinders—4 speeds forward
—138", 152", and 164" wheelbases—Spiral bevel drive.

Model A-4—2 tons

6 cylinders—5 speeds forward
—145", 156", 170" and 185" wheelbases—Spiral bevel drive.

Model A-5—3 tons

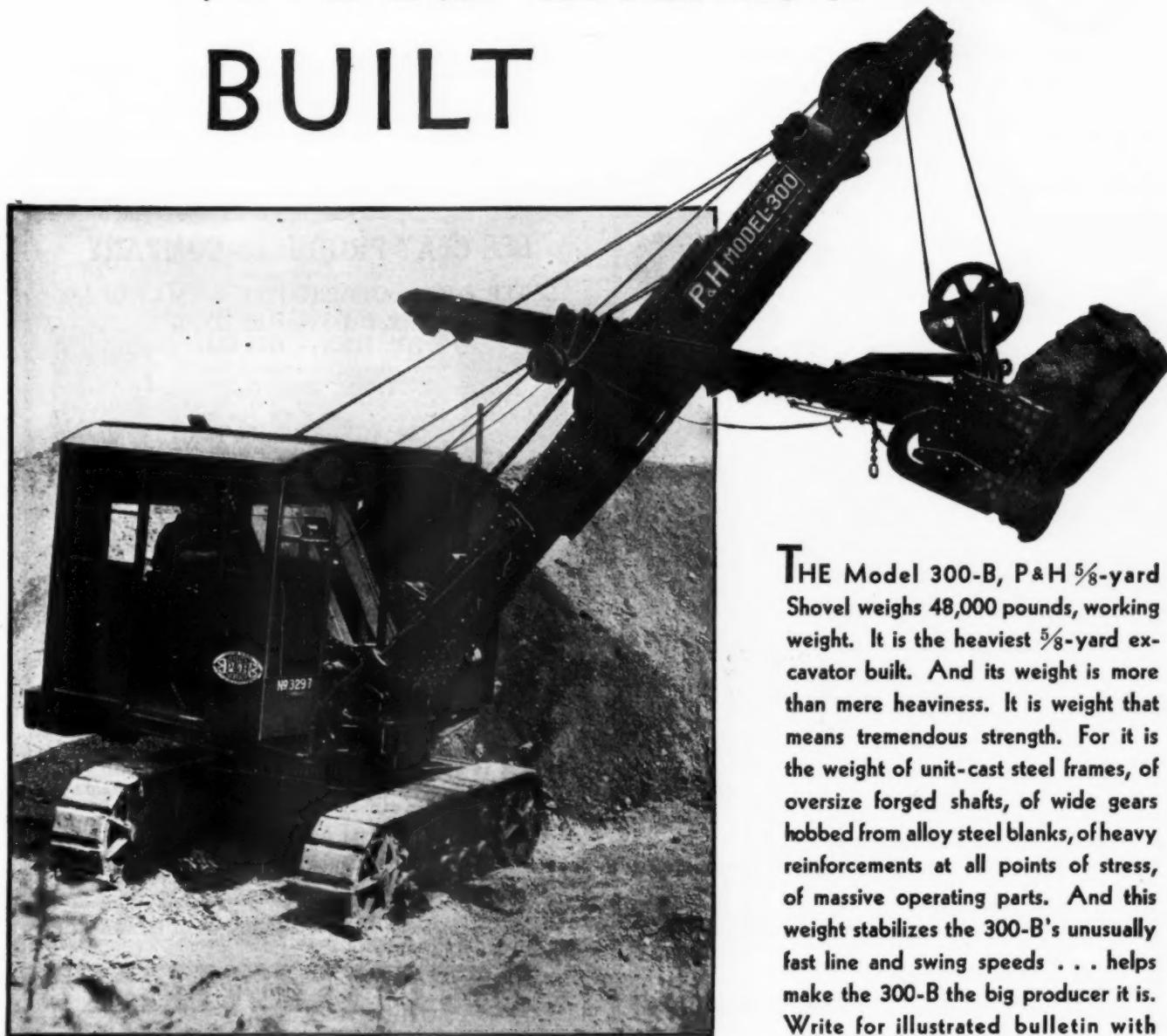
6 cylinders—5 speeds forward
—140", 156", 170", 190", and 210" wheelbases—Spiral bevel drive.

Model A-6—3 tons

6 cylinders—5 speeds forward
—140", 156", 170", 190", and 210" wheelbases—Double reduction drive.

INTERNATIONAL TRUCKS

The HEAVIEST 5/8-YARD EXCAVATOR BUILT



THE Model 300-B, P&H 5/8-yard Shovel weighs 48,000 pounds, working weight. It is the heaviest 5/8-yard excavator built. And its weight is more than mere heaviness. It is weight that means tremendous strength. For it is the weight of unit-cast steel frames, of oversize forged shafts, of wide gears hobbled from alloy steel blanks, of heavy reinforcements at all points of stress, of massive operating parts. And this weight stabilizes the 300-B's unusually fast line and swing speeds . . . helps make the 300-B the big producer it is. Write for illustrated bulletin with complete details.

Model 300-B is quickly convertible into shovel, dragline, crane, trench-hoe, skimmer-scoop or pile-driver. All main frames are single-piece steel castings. Shafts are forged chrome-manganese steel, of large diameter. Wide faced cut steel gears. 50h.p. gasoline engine mounted directly upon unit cast revolving frame. Power clutch control relieves operator of heavy work.

P&H Model 300-B EXCAVATOR

AGENTS

ALBUQUERQUE, N. M., R. L. Harrison Co.
ATLANTA, GA., Yancey Bros.
HOUSTON, TEXAS, R. B. Everett & Co.
JACKSONVILLE, FLA., Burgman Tractor-Equip. Co.
MIAMI, FLA., McDonald Tractor-Equip. Co.
NEW ORLEANS, LA., Southern States Equip. Co.
ST. LOUIS, MO., M. G. Hennessey Machinery Co.

HARNISCHFEGER CORPORATION

Established in 1884

4427 W. National Ave., Milwaukee, Wisconsin

Branch Offices:

Atlanta, Baltimore, Birmingham, Columbia, Dallas, Jacksonville, Kansas City, Memphis, St. Louis.

Warehouses & Service Stations:

Dallas, Jacksonville, Memphis.

Pittsburgh Piping

MANUFACTURERS AND CONTRACTORS

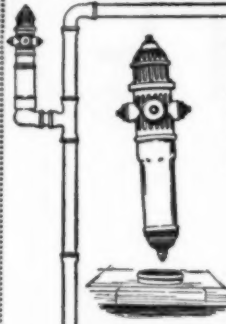


WE ARE fully equipped to supply fabricated materials and to install complete piping systems for Electric Power Stations, Blast Furnaces, Steel Mills, Coke Works, and Industrial Plants of every description—backed by an experience of more than a quarter century.

PITTSBURGH PIPING & EQUIPMENT CO.

43rd St. and A. V. R. R., Pittsburgh, Pa.

New York	Chicago	San Francisco	Cleveland
220 Broadway	Peoples Gas Bldg.	Call Bldg.	Ulmer Bldg.
Houghton, Mich.	Indianapolis	Detroit	
Dee Bldg.	Occidental Bldg.	General Motors Bldg.	



Mathews Fire Hydrant

Because the entire barrel, with all parts, is removable, broken "MATHEWS" hydrants are easily replaced without digging.

CAST IRON PIPE and FITTINGS
SAND SPUN (Centrifugally Cast)
and PIT CAST
GATE VALVES VALVE BOXES

R. D. WOOD & CO.

PHILADELPHIA, PENNA.

"The Whole
Works" Out
in a Jiffy

In business continuously since 1803

INDUSTRIAL PIPING

Power Piping Co., Pittsburgh, Pa.

**Power
Piping**
FOR EVERY INDUSTRIAL NEED

LEE CLAY PRODUCTS COMPANY

Manufacturers of

SEWER PIPE - CULVERT PIPE - WALL COPING

METER BOXES - FLUE LINING
FIRE BRICK - FIRE CLAY



Grier - Lowrance Construction Company, prominent Mill Constructors of Statesville, North Carolina, writes through their Superintendent, W. W. Able: "It gives us pleasure to say of your Pipe, that it is among the best that we have ever used on any job. We used Lee Clay Products throughout on the Chesnee Mill Extension and are glad to say that we found a minimum of breakage, and a maximum of Quality and Service."

LEE CLAY SHIPS GOOD PIPE

Kentucky Fire Clay produces a close vitreous body that is peculiarly adapted for conducting industrial wastes. Send us a list of your requirements, so that we may quote you delivered prices.

Office and Plant:

CLEARFIELD, Rowan County KENTUCKY

One-Fifth
The
Weight of
Cast Iron
Pipe

ROOT SPIRAL RIVETED PIPE

One-Third
The
Weight of
Wrought
Pipe

AN ABSOLUTELY TIGHT DURABLE PIPE

The lap riveted seam repeats its cycle every twelve inches, forming a broad-stiffening rib of great value, and makes Root pipe one-third stronger than any other type of pipe construction. Light weight and simple connections reduce transportation handling and erection costs. Suitable for conveying water, air, gas, exhaust steam and powdered coal.

ABENDROTH & ROOT MANUFACTURING COMPANY
Pipe Specialists Continuously Since 1867 Sales Office: Woolworth Bldg., N. Y.

UNIVERSAL CAST IRON PIPE

THE CENTRAL FOUNDRY COMPANY

Graybar Bldg., 43rd St. and Lexington Ave., New York, N. Y.
Chicago Birmingham Dallas San Francisco

no packing no calking no bell holes

GLAMORGAN

PIPE & FOUNDRY CO.

GENERAL FOUNDERS AND MACHINISTS
LYNCHBURG, VA.

From One Source

You can secure your entire steel requirements from Bethlehem — with the assurance that each item is as good and dependable as the facilities of a completely equipped organization with years of experience can make it.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

BETHLEHEM

Vogt

PRODUCTS

REFRIGERATING AND ICE
MAKING MACHINERY—
WATER TUBE & HORIZONTAL
RETURN TUBULAR BOILERS
DROP FORGED STEEL VALVES
& FITTINGS—OIL REFINERY
EQUIPMENT—Ask for Bulletin

HENRY VOGT MACHINE CO., Manufacturers, Louisville, Ky.

CAST IRON PIPE AND FITTINGS

American Cast Iron Pipe Company
Birmingham, Ala.
SALES OFFICES IN PRINCIPAL CITIES



P&H
Traveling
Cranes and Hoists

Harnischfeger
Corporation
Established 1884
Crane and Hoist Division
4427 W. National Ave.
Milwaukee, Wis.



Reading 5-Point Pipe was chosen to guard the New York Post Office from the attacks of Time, That Tough Old Tester. This beautiful structure was designed by McKim, Mead & White, Architects, New York.

WHEN YOU FIGURE OPERATING COSTS DON'T FORGET PIPE!

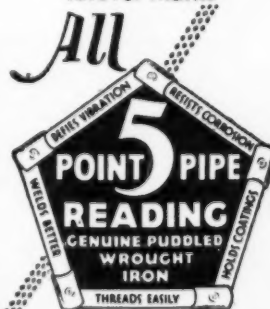
When you estimate the operating costs of any building you plan, be sure to include pipe maintenance. For pipe is an item of operation as surely as machinery! Inferior pipe, with its constant failures, piles up operating costs sky-high. Reading 5-Point Pipe, with its proved record of outlasting the building in which it is installed, means lowered operating costs per year of service.

It pays to put rust-resisting, Reading 5-Point Pipe into your specifications—and to keep it there! This pipe is Genuine Puddled Wrought Iron, made by the original puddling process that has passed the Test of Time, that Tough Old Tester. We'll be glad to give you estimates showing how much Reading 5-Point Pipe saves in various types of buildings—get in touch with our nearest representative today.

READING IRON COMPANY, Reading, Pennsylvania

Use only Reading 5-Point Nipples with Reading 5-Point Pipe... you'll know them by the indented spiral band.

For Your Protection,
This Indented Spiral
Forever Marks



Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

DIRECTORY

ARCHITECTS

ENGINEERS

CHEMISTS

GEOLOGISTS

CHEMICAL ENGINEERS

ACCOUNTANTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Leslie N. Boney

Architect

Schools—Public Buildings

WILMINGTON, N. C.

Milburn, Heister & Co.

Architects

WASHINGTON, D. C.

Wm. J. J. Chase, A. I. A.

Architect

Public and Commercial Buildings
140 Peachtree St. ATLANTA, GA.**Geo. Harwell Bond**

—A-I-A—

ARCHITECT

Candler Building ATLANTA, GEORGIA

G. Lloyd Preacher & Co., Inc.

Architects and Engineers

1204 Wynne Cloughton Bldg.,
ATLANTA, GA.**Chas. T. Main, Inc.**

Industrial Engineers

Mills, Warehouses, Complete Develop-
ments
Electrical, Steam and Water Power
Reports—Appraisals
301 Devonshire St. BOSTON, MASS.**E. S. Draper**

Landscape Architect and Engineer

Fellow American Society of
Landscape Architects1516 S. 4th St., CHARLOTTE, N. C.
101 Marietta Bldg., ATLANTA, GA.**B. Russell Shaw Co.**

INCORPORATED

Consulting and Designing Engineers

AIRPORTS—AIRLINES

Arcade Bldg., ST. LOUIS, MO.

James D. Lacey & Co.

Timberland Factors

Forest Engineering—Management
Aerial Surveys—Timber Reports
350 Madison Avenue, NEW YORK
231 So. La Salle St. CHICAGO
JACKSONVILLE — NEW ORLEANS**Airmap Corporation of America**Aerial Surveys and Maps
Consultants and EngineersThe AIRMAP—The Engineer's Aerial
Map for City Planning, Water
Supply Studies, Zoning,
Complete Aerial Tax Map Service
42 Flatbush Extension BROOKLYN, N. Y.**Invicta Engineering Company**Research and Development
Industrial Processes
Mechanical InventionsCompetent engineering service to plants
without engineering departments and
to individuals requiring such service.
P. O. Box 2494 BIRMINGHAM, ALA.**Ira G. Hedrick, Inc.**Mem.
A. S. C. E.
Consulting EngineerDesigns, Supervision, Estimates, Bridges
and Structural Work.

HOT SPRINGS NAT'L PARK, ARK.

Wadleigh and Bailey

Consulting Mining Engineers

Management, Investigation, Appraisal of
Mining Properties.
Fuel Consultants, Natural Resource
Surveys.
One Broadway, NEW YORK, N. Y.
Southern Bldg., WASHINGTON, D. C.**Charlton & Davis**

Civil Engineers

General Engineering Practice

Local Maps for Sale

PORT LAUDERDALE, FLA.

Elroy G. Smith

Consulting and Designing

Civil-Hydraulic Engineer

Industrial Hydro-Electric Development
a Specialty
313-313-A Herald Bldg.,
AUGUSTA, GA.**Consoer, Older & Quinlan, Inc.**

Mems. A. S. C. E.

Consulting Engineers

Water Supply—Sewerage—Industrial
Engineering
317 N. 11th St. ST. LOUIS, MO.
205 W. Wacker Drive, CHICAGO, ILL.**Harza Engineering Co.**

Consulting Engineers

Dams, Hydraulic, Hydro-electric, Flood
Control and Sanitary Projects
20 N. Wacker Drive
CHICAGO**J. E. Greiner & Company**

Consulting Engineers

Design, Construction, Investigation, Ad-
visory Service—Bridges, Docks, Piers,
Warehouses and other Engineering
Structures.

1201 St. Paul St. BALTIMORE, MD.

C. A. P. Turner

Consulting Engineer

M. Am. Soc. C. E. Reinforced Concrete
and Structural Steel Bridges, Buildings,
and Manufacturing Plants.
300 Builders Exchange Bldg.,
MINNEAPOLIS, MINN.**Walter H. Wheeler**

M. A. S. C. E. and M. E.

Engineers

Mfg. Plants, Buildings, Bridges, Dams,
1000 Met. Life Bldg.,
MINNEAPOLIS, MINN.**Arthur L. Mullergren**

Consulting Engineer

POWER SPECIALIST

770 Board of Trade Building
KANSAS CITY, MO.**Widmer Engineering Co.**

Industrial Engineers

ST. LOUIS, MO.

Fuller & McClintock

Engineers

170 Broadway, NEW YORK
Penna. Bldg., 15th and Chestnut Sts.,
PHILADELPHIA, PA.
Walsix Bldg., 600 Walnut St.,
KANSAS CITY, MO.**Charles H. Herty**

Industrial Consultant

Special attention given to the location
and development of industries utilizing
the natural resources of Southern States,
especially as affected by Chemistry.
101 Park Avenue, NEW YORK CITY**William S. Lee**Mem. Am. Soc. C. E.; Mem. Am. Soc.
M. E.; Mem. Eng. Inst. Can.; Fellow
Am. Inst. E. E.

Consulting Engineer

535 Fifth Ave. NEW YORK CITY
CHARLOTTE, NORTH CAROLINA**MacElwee & Crandall, Inc.**Industrial and Civil Engineers
Investigations, Reports, Design, Super-
vision—Port Development, Piers, Ter-
minals, Airports, City Planning, Water
Front, Reclamation, Industrial Surveys
Main Office: 11 West 42d Street
CAMBRIDGE, MASS. NEW YORK CITY**Howerton Engineering Co.**

Consulting and Contracting Engineers

MUNICIPAL IMPROVEMENTS
HIGHWAY IMPROVEMENTS
Water Works, Sewer, Hard Surface
Streets, Highways, Contracting Con-
struction. ASHEVILLE, N. C.**Gilbert C. White Co.**

Consulting Engineers

Waterworks Paving

Sewerage

RICHMOND, VA.
DURHAM, N. C.**Morris Knowles, Inc.**

Engineers

Water Supply and Purification, Sewer-
age and Sewage Disposal, Valuations,
Laboratory, City Planning.

PITTSBURGH, PA.

W. E. Biggs Engineering Co.Consulting Engineers
Power Plants and Industrial power ap-
plications. Economic use of power and
process steam.
Heating and Ventilating
Design—Supervision—Operation
Holston Bank Bldg.
KNOXVILLE, TENN.**Gardner & Howe**Structural Engineers
Steel and Reinforced Concrete Buildings,
Bridges and ViaductsPorter Bldg. MEMPHIS TENN.
Kirby Bldg. DALLAS, TEXAS**Freeland, Roberts & Co.**

Consulting Engineers

Concrete and Steel Structures

NASHVILLE, TENN.

C. N. Harrub Engineering Co.

Member Am. Soc. C. E.

Civil and Sanitary Engineers
Water Supply, Sewerage, Paving and
Structural Improvements.
705-9 Fourth & First Nat'l. Bk. Bldg.
NASHVILLE, TENN.**Engineering Service Corp.**Consulting Engineers
Civil-Electrical-Mechanical-Refrigeration
COLD and DRY STORAGE WAREHOUSES
DESIGNS
Reports—Appraisals—Designs—Surveys
Docks and Harbor Designs—Ind. Engr.
Water Sup.—Sewer Sys.—Oil and Gas Lines
HOUSTON, TEXAS, U. S. A.**Lee H. Williamson**

MEM. AM. SOC. C. E.

Consulting Engineer

CHARLOTTESVILLE, VA.

Algernon Blair

Contractor

MONTGOMERY, ALA.

Hornbuckle Contracting Co.

INCORPORATED

Municipal Improvements
Industrial Village Utilities

ATLANTA, GA.

S. P. Rees

Contracting Engineer

Municipal—Industrial—Swimming Pool
Gravity and Pressure Filter and
Softening Plants

137 Huntington Road ATLANTA, GA.

S. E. Huey

Consulting Engineer

Natural Gas

Ouschits Bank Bldg. MONROE, LA.

J. V. & R. T. Burkes, Inc.

MEMBER A. G. C.

General Contractors

NEW ORLEANS, LOUISIANA.

Kansas City Bridge Co.

Established 1893

Builders of Railroad and
Highway Bridges
River Improvement Work
General Office, 1012 Baltimore Ave.,
KANSAS CITY, MO.**T. C. Thompson and Bros.**

Incorporated 1895

General Contractors and Builders
BIRMINGHAM, ALA.
CHARLOTTE, N. C.**Angle-Blackford Company**

General Contractors

GREENSBORO, N. C.

Fiske Carter Construction Co.

General Contractors

GREENVILLE, S. C.
SPARTANBURG, S. C.**Poe Piping & Heating Co.**

Contractors

For Power Piping, Heating and
Sprinkler System
108 S. Main St. GREENVILLE, S. C.**Lee A. Gridley Construction Co.**

General Construction

CRANE SERVICE—FOUNDATIONS
KNOXVILLE, TENN.**Steel & Lebby**

JOHN A. STEEL, JR.

THOS. D. LEBBY

Engineers and Constructors
The design and erection of concrete and
steel structures.
Holston Bank Building
KNOXVILLE, TENN.**The Warner Service Company**

Electrical and Mechanical

Contractors

Cor. Clinch and Central Ave.
KNOXVILLE, TENN.

Charles W. Alpaugh & Sons
Hydraulic and Construction Engineers
Dams & Specialty: Investigations,
Estimates Free.
MANASSAS, VA.

The John W. Cowper Co., Inc.
General Contractors
State Planters Bank Bldg.
RICHMOND, VA.

Floyd Jennings & Co., Inc.
Plastering Contractors
133 Cain St., N. E. ATLANTA, GA.

Walker Electrical Company
Electrical Contractors
General Offices: ATLANTA, GA.
Sales Offices:
ATLANTA, GA. COLUMBUS, GA.
GREENSBORO, N. C.

Hoosier Engineering Co.
Erectors of Transmission Lines and
Substations
100 W. Monroe St. CHICAGO, ILL.
Smith Tower SEATTLE, WASH.

John Eichleay, Jr. Co.
Steel Construction
Structural Steel
House Raising and Moving
Shoring and Foundation Work
South 20th & Wharton Sts.
PITTSBURGH, PA.

J. B. Converse & Co., Inc.
Engineer
Industrial Investigations, reports,
plans, estimates, supervision.
MOBILE, ALA.

Whitman, Requardt & Smith
Engineers
Water Supply, Sewerage and Structural
Engineering, Reports, Design,
Valuations.
Baltimore Trust Bldg., BALTIMORE, MD.
ATLANTA, GA. ALBANY, N. Y.

Charles Herbert Spring QUANTITY SURVEYS

835 Jefferson Standard Building GREENSBORO, N. C.

Wiedeman and Singleton, Inc.
(Successors to Paul H. Norcross)
Consulting Engineers

WATER WORKS, SEWERS, SEWAGE DISPOSAL
APPRAISALS, VALUATIONS, REPORTS
Candler Building ATLANTA, GA.

Hardaway Contracting Company
Engineers Contractors

Water Power Developments, Bridges
COLUMBUS, GEORGIA.

Batthey & Kipp
Incorporated

Consulting and Constructing Engineers

Industrial Plants Power Plants
Railroad Shops, Terminals and Electrification

231 S. La Salle Street CHICAGO, ILL.

IF you wish to keep posted on the
progress of the South, read the
MANUFACTURERS RECORD.

Mees & Mees

Engineers and Industrial Architects
202 Court Arcade.
CHARLOTTE, NORTH CAROLINA

R. S. Withers

Petroleum Geologist
Oil Leases and Royalties
508 Tower Bldg. JACKSON, MISS.

The Picard Laboratories

Chemists and Inspecting Engineers
Inspection of Cast Iron Pipe, Structural
Steel, Cement, Railroad Equipment, etc.
Chemical Analysis of all kinds.
Representation in all Principal Cities
Clark Building, BIRMINGHAM, ALA.

Conard & Buzby

W. R. CONARD J. S. BUZBY
Inspection and Tests of Materials of
Engineering and Construction
Reports, Designs, Supervision
Construction
BURLINGTON, N. J.

Wiley & Company, Inc.

Analytical and Consulting Chemists—
Experts on Fertilizer Materials, Coal,
Greases, Food, Drugs, Dairy Products,
Chemical and Bacteriological Examina-
tions of Water for Domestic and Manu-
facturing Processes.
Calvert and Read Sts. BALTO., MD.

Dow & Smith

A. W. Dow, Ph.D.; F. P. Smith, Ph.D.
Mem. Am. Inst. Ch. Engrs.
Mem. Am. Soc. Civ. Engrs.
Chemical Engineers, Consulting Paving
Engineers, Asphalts, Bitumens, Cement,
Paving Materials
131 East 23rd St. NEW YORK

Stillman & Van Siclen, Inc.

Chemists and Chemical Engineers
Analysis and Inspection of Asphalt,
Paving Materials, Cement, Concrete
Building Materials.
227 Front Street NEW YORK
BEKMAN 5261

Barrow-Agee Laboratories, Inc.

Chemists and Engineers
Analysis tests and inspection of all
building and construction materials.
MEMPHIS, TENN.
LITTLE ROCK, ARK.
JACKSON, MISS. SHREVEPORT, LA.

The J. B. McCrary Company
Engineers

ATLANTA

GEORGIA

MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-light and Sewer Systems—Paving
and Road Work.

Byllesby Engineering & Management Corporation

231 S. La Salle Street

CHICAGO

NEW YORK

SAN FRANCISCO

James W. Billingsley

Consulting Engineers

Investigations—Plans—Specifications and Supervision
Industrial Plants—Docks—Seawalls—Roads—Bridges and Municipal Work.
NEW ORLEANS, LA.

Spoon & Lewis

Consulting Engineers

Water Works, Sewerage Works, Streets, Bridges, Industrial Plants,
Highways, City and Land Development, Port Development, Harbor Works,
Investigations—Designs—Supervision of Construction
GREENSBORO, N. C. BOSTON, MASS.

Fay, Spofford & Thorndike

Associates

Consulting Engineers

SANDERSON & PORTER

ENGINEERS

FOR THE

FINANCING—REORGANIZATION—
DESIGN—CONSTRUCTION

OF
INDUSTRIALS and PUBLIC UTILITIES

CHICAGO

NEW YORK

SAN FRANCISCO

The J. G. White Engineering Corporation

Engineers—Constructors

43 Exchange Place

NEW YORK

Scofield Engineering Company

Consulting Engineers

POWER AND INDUSTRIAL PLANTS AND PROCESSES.
Design—Construction—Valuations.

Commercial Trust Bldg.,

PHILADELPHIA

J. E. Sirrine & Company

Engineers

Factory Design: Hydro- and Steam-Electric Plants; Warehouses,
Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports.

General Offices: GREENVILLE, SOUTH CAROLINA

Floyd & Lochridge

Consulting Engineers

Hydraulic Investigations, Water Supply, Irrigation, Flood Control, Drainage
Dams, and Power Development.
Investigations for Financial Institutions.

Wilson Building

DALLAS, TEX.

Wiley & Wilson

Consulting Engineers

PLANS, SPECIFICATIONS AND SUPERVISIONS
STEAM AND ELECTRIC POWER PLANTS
STEAM HEATING AND VENTILATING SYSTEMS
Complete Mechanical and Electrical Equipment for Public and Private Buildings
and for Institutional Groups.
MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.

Tucker & Laxton

Contracting Engineers

Filters, Concrete Work, Hydro-Electric and Steam Electric Construction.

CHARLOTTE, NORTH CAROLINA

Ford, Bacon & Davis
Incorporated
Engineers

39 Broadway, New York

Philadelphia

Chicago

San Francisco



Lockwood Greene Engineers, Inc.

*Plans—Specifications—Reports—
Appraisals—for Industrial Plants*

NEW YORK BOSTON CHICAGO CLEVELAND
CHARLOTTE SPARTANBURG

Cornell-Young Company

*Incorporated
General Contractors*

Railroads and Highways, Reinforced Concrete and Steam Shovel Work.
784 Georgia Casualty Bldg. MACON, GEORGIA.

Frederick Snare Corporation

Contracting Engineers

Difficult Foundations and Engineering Problems a Specialty

114 Liberty Street
New York

PHILADELPHIA

HAVANA

Webb Electric Company

Electrical Contractors

Industrial, Commercial and Institutional
Electrical Installations.

ANDERSON, S. C.

Allen J. Saville, Inc.

ENGINEERING AND CONSTRUCTION

Electric Building

RICHMOND, VIRGINIA

A. H. Calligan & Company

Contractors

*Specialties: Precast Concrete Piles, Foundation Masonry,
Railway Construction*

RICHMOND

VIRGINIA

Dixie Electro Plating Co.

*RUST PROOFING ENGINEERS AND CONTRACTORS
UDYLITE PROCESS*

PLANT CAPACITY PRACTICALLY UNLIMITED

217 Caroline Street

Office and Plant

HOUSTON, TEXAS

B. Stanley Simmons, Inc. and Associates

A. I. A.

Architects

PUBLIC AND COMMERCIAL BUILDINGS

1215 H Street, N. W.

WASHINGTON, D. C.

NEW YORK OFFICE: Fifth Ave at 47th Street

The Ballinger Company

Architects Engineers Appraisers

Commercial, Industrial and Institutional Buildings

PHILADELPHIA

NEW YORK

Hollowell, Gorham & Company

Auditors, Accountants, Industrial Engineers

COST SYSTEMS—AUDITS—TAX SERVICE

Special Investigations for Consolidations, Reorganizations, etc.

GREENSBORO, N. C.

ROCKY MOUNT, N. C.

Tilghman Moyer Company

Bank Architects and Builders

ALLENTOWN

PENNSYLVANIA

Dame-Wolfe & Co.

*INDUSTRIAL SURVEYS—FINANCING—
MANAGEMENT*

215 15th St., N. W.

WASHINGTON, D. C.

Robert W. Hunt Company

ENGINEERS

Inspection—Tests—Consultation

22nd FLOOR INSURANCE EXCHANGE, CHICAGO

Laboratories and Offices in all Large Cities

Walter H. Flood & Co.

Chemical Engineers

Inspection and Tests

Paving and Engineering Materials

Plant and street inspection on all types of pavements. Reports, specifications, consultation.

932 E. 44th St.,
CHICAGO, ILL.

321 Daniel Building
JACKSON, MISS.

Pittsburgh Testing Laboratory

ANALYSIS INSPECTION TESTING RESEARCH
PITTSBURGH, PA.

Branch Offices in the Principal Cities

Established 1881

Froehling and Robertson, Inc.

Inspection Engineers and Chemists

*Inspection of Cement, Steel, Pipe, Timber, Brick, Tile
Design and control of Asphalt and Concrete Mixtures.
Water Analysis a Specialty.*

RICHMOND

NEW YORK CITY

Southwestern Laboratories

Chemical and Testing Engineers

*Inspection Steel and Cement for Bridges and Buildings. Creosoted Timber.
Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement
at Plant, Chemical Analyses, Etc. Representation at usual points of origin.*

FORT WORTH

DALLAS

HOUSTON

AMARILLO

Courtenay De Kalb

Mining Engineer and Economic Geologist

Reports on Mineral Products

*Design and Advice on Treatment Plants for Ores and Non-Metallic Products
15 Gramercy Park*

NEW YORK, N. Y.

Sprague & Henwood, Inc.

Core and Wash Borings

*For Buildings, Bridges, Dams and all kinds of Minerals
Anywhere in the United States or Canada*

Main Office

SCRANTON, PENNA.

Mott Core Drilling Company

Diamond Core Drill Contractors

*We Test Coal, Clays, and Mineral Properties, Foundation Testing, Dams,
Bridges, Buildings, Wash Borings, Dry Samples.*

MAIN OFFICE

HUNTINGTON, W. VA.

Southern Drilling Company

Diamond Core Drill Contractors

*Foundation Testing for Buildings, Bridges and Dams
Exploration and development of coal and mineral properties.*

SALTVILLE, VIRGINIA



WE LOOK INTO THE EARTH

By use of Diamond Core Drills

*We test foundations for buildings,
bridges and dams. We prospect coal
and mineral lands in any part of North
and South America.*

PENNSYLVANIA DRILLING CO.
1812 West Carson St., Pittsburgh, Pa.
Drilling Contractors

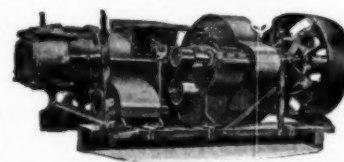
CLAY WORKING MACHINERY

*For Brick, Tile and Block,
from smallest to largest
capacity*

Write for catalogue.

Full line equipment.

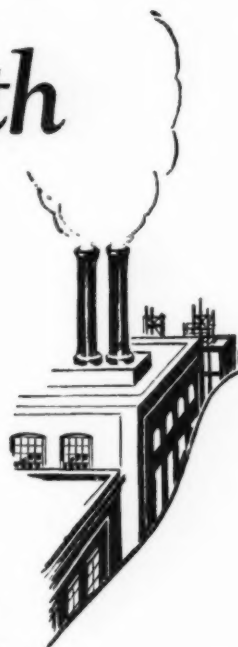
J. C. STEELE & SONS
Statesville, N. C., U.S.A.



Barstow Engineers Beat the Drouth

THE Southeast had never known such a drouth. Streams were drying up. Water power was about to fail.

Barstow engineers were asked to speed construction to beat the drouth by installing steam power. It was a big job, but they had the first steam turbine running early in August. The drouth was beaten.



The finished job — as well as the plans — can be turned over to you in the shortest possible time when you place the contracts for your building with an engineering and construction firm of long experience.

We design and construct all types of industrial structures. Send for our Construction Booklet.

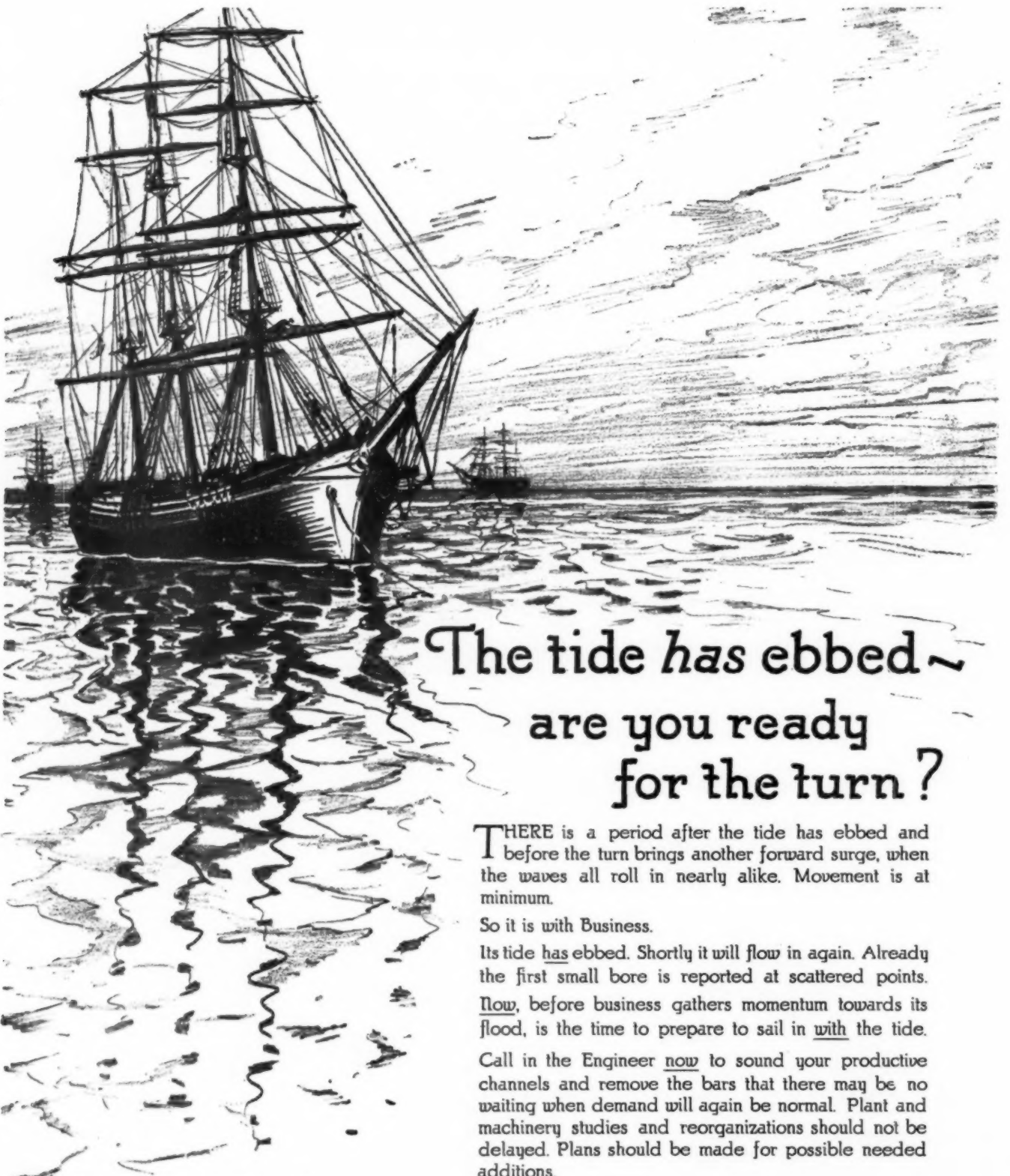


W. S. BARSTOW & COMPANY, INC.

Engineering—Design—Construction

120 Wall St., New York

412 Washington St., Reading, Pa.



The tide *has* ebbcd ~ are you ready for the turn?

THERE is a period after the tide has ebbcd and before the turn brings another forward surge, when the waves all roll in nearly alike. Movement is at minimum.

So it is with Business.

Its tide has ebbcd. Shortly it will flow in again. Already the first small bore is reported at scattered points.

Now, before business gathers momentum towards its flood, is the time to prepare to sail in with the tide.

Call in the Engineer now to sound your productive channels and remove the bars that there may be no waiting when demand will again be normal. Plant and machinery studies and reorganizations should not be delayed. Plans should be made for possible needed additions.

The tide has ebbed.

J. E. SIRRINE & COMPANY

Engineers

Greenville

South Carolina

John Stillman



Textile Mills
Warehouses
Surveys
Examinations
Appraisals

Rayon Plants
Tobacco Factories
Steam Plants
Water Supplies
Reorganizations

General Industrial Plants
Production Studies
Hydro-Electric Systems
Power Application & Lighting
Sanitary Engineering



Short-cutting Through the Valley of the Shen-an-doah

SHEN-AN-DOAH"—meaning in the picturesque language of the Indian—"Daughter of the Stars"—a scenic 240-mile valley lying between the historic Blue Ridge and the majestic, rugged Alleghany mountains. The Norfolk and Western Railway's main north and south line follows the valley's entire length, between Hagerstown, Md., and Roanoke, Va., paralleling, for portions of the way, both the beautiful Shenandoah River and the new Shenandoah National Park.

More important perhaps is the fact that, as a short cut for shippers and receivers of freight, the Shenandoah Valley Route of the Norfolk and Western is the most practical route available west of the Potomac River Crossing, at Washington, and east of Cincinnati and the great Midwest. Fast freight schedules have been established between Hagerstown, Md., Winston-Salem, N. C., Bristol, Va.-Tenn., and Norton, Va., with many excellent connections over direct routes to principal points in the southwest. During the World War this short line handled an enormous traffic—the strongest evidence, perhaps, of its practicability and utility.

From a heavy traffic viewpoint, the Shenandoah Valley Route is outstandingly modern: electric train control, automatic-electric signal devices, heavy rails laid on a smooth, well-ballasted roadbed, enable gigantic new locomotives to make fast schedules with safety and regularity.

Your nearest Norfolk and Western Freight Traffic Department representative will give complete information on this popular "short cut"—and on the railway's many other modern facilities and services.

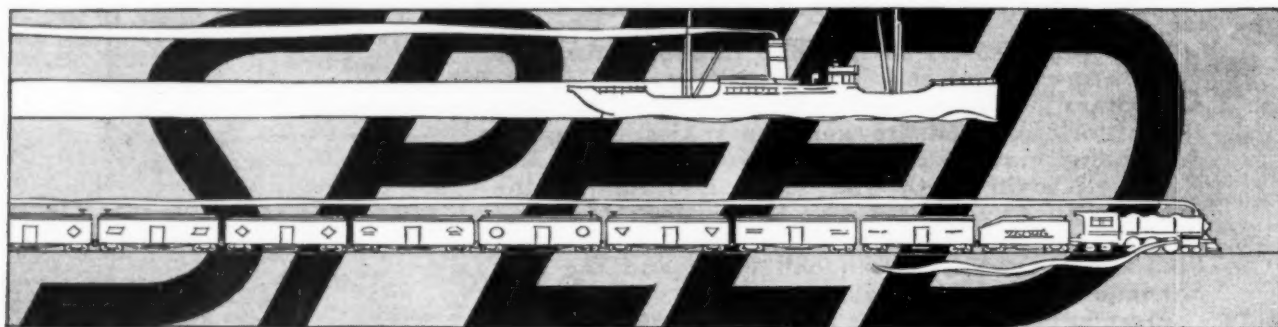


NORFOLK^a_nd WESTERN RAILWAY
ROANOKE , VIRGINIA .

GALVESTON—AMERICA'S PORT OF QUICKEST DISPATCH

GALVESTON

-ORGANIZED FOR



TODAY'S distribution and marketing plans call for speed along with economy.

The Port of GALVESTON meets today's needs—it is organized for speed. Every modern mechanical help is employed in loading and unloading. Piers and warehouses are arranged for quick movement of cargoes. The rail terminal yards are planned so that the maximum is held down to two switchings for any car.

There is docking space for 160 vessels to load from piers. Ships cast off and are on their way . . . GALVESTON is a deep-water port on the open sea.



Write us for a free subscription to "Shippers Digest of Galveston," published weekly. Full sailing lists of vessels in the coastwise and foreign trade, news of cotton, wheat, flour, sulphur and general cargo movements and other valuable shipping information. Write today.

GALVESTON's unit management, too, makes for speed. Every function of the port—unloading, warehousing, storage, financing, insurance and loading—is centrally controlled. All the services are closely co-ordinated to cut down the number of times a shipment is handled, to speed it on its way in the shortest possible time.



Galveston Wharf Co.

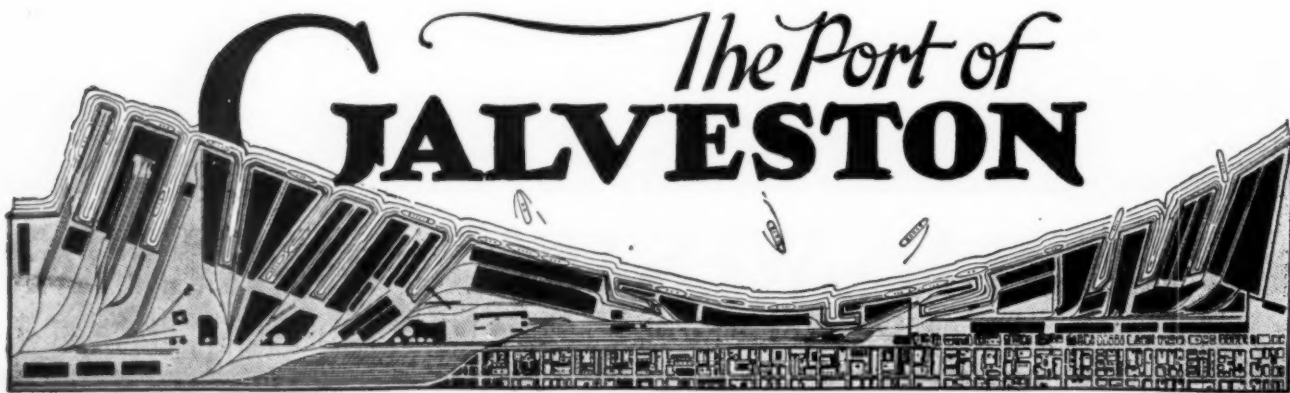
Established 1854

Galveston, Texas, U. S. A.

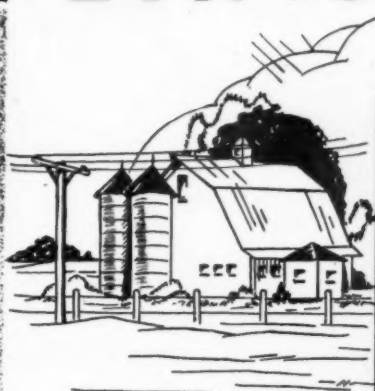
Geo. Sealy, Pres.

F. W. Parker, Gen. Mgr.

If you want speed with economy, route shipments to and from the Southwest "Via GALVESTON".



SOUTH AND SOUTHWEST TEXAS



VICTORIA DISTRICT



A short distance south of San Antonio, extending inland from beautiful Matagorda Bay, lies a land of splendid climate and excellent water, of adequate transportation facilities and plentiful labor supply—a land of good living and good working conditions.

Surrounding the charming and progressive city of Victoria is an agricultural district of growing importance. Dairying and cotton-growing are consistently profitable, and poultry-raising and the shipping of dressed poultry is fast becoming a leading industry. Here too, are deposits of almost limitless capacity of high-grade gravel.

At Port Lavaca on Matagorda Bay the industry of catching and shipping shrimp thrives; for here is one of the world's largest shrimp producing and shipping ports; shrimp of superior quality are plentiful.

The Central Power and Light Company is privileged to serve the utility needs of this important district, and will be glad to furnish any desired information. Address Department of Industrial Development, Frost National Bank Building, San Antonio.

CENTRAL POWER AND LIGHT COMPANY

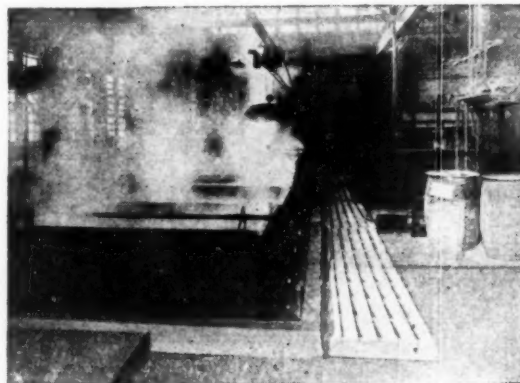
Now Serving 178 Communities in South and Southwest Texas

No. 10 of a series depicting natural
advantages within the territories
served by this Company.

Higher efficiency

Lower costs

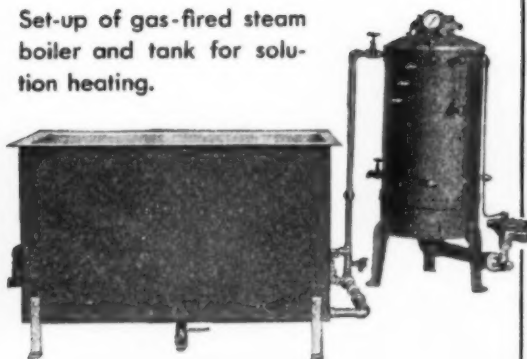
Gas-fired immersion coil heater applied to the heating of metal cleaning solution.



THE application of gas to the problems

of solution heating has resulted always in higher efficiency with greatly lowered operating cost. Gas heat promotes longer tank life; its temperature is under easy and accurate control—a vital necessity in many phases of solution heating. Modern equipment makes it possible to operate gas-fired solution-heating tanks far over normal capacity, while modern turndown equipment provides the ultimate in economy when tanks are idle or waiting. The free book "Gas Heat" tells you what other industries are doing with gas-fired solution-heating equipment. Send for your copy.

Set-up of gas-fired steam boiler and tank for solution heating.



A M E R I C A N G A S A S S O C I A T I O N

420 Lexington Avenue, New York



Like Diego de Ordaz's city of gold

EL DORADO ARKANSAS

IT was in 1921 that railroad station agents throughout the nation were besieged for tickets to a new oil boom town in Arkansas. On arrival, and proceeding up the dusty streets bordered by new wooden sidewalks, newcomers had a feeling of entering a colossal carnival.

So this was El Dorado! The oil boom passed, as all of them do, but El Dorado accomplished the feat of surviving a boom. Skyscrapers replaced the shacks, modern hotels superseded the bunkhouses; El Dorado became a city.



In no other southern city is there a more ideal location for woodworking plants, for immediately surrounding El Dorado is an abundance of Pine, Oak, Gum, Ash and Beach.

The celebrated expeditions of Diego de Ordaz could have discovered no richer field of opportunity than that afforded by El Dorado, a veritable City of Gold.

This company is proud of its opportunity to serve El Dorado with Natural Gas for domestic and industrial use.

Little Rock Gas & Fuel Co. — Southern Cities Distributing Co.
Public Utilities Corporation of Arkansas—Arkansas Louisiana Pipe Line Co.

ARKANSAS

NATURAL GAS **CORPORATION**

General Offices, Shreveport, La.

A Cities Service Subsidiary

New York Office: 60 Wall Street

BUILDERS AND ENGINEERS FOR THE BUSINESS LEADERS OF AMERICA

EVEREADY



SKF

VANADIUM



Domino

Firestone



Victor

THE
EDISON ELECTRIC
ILLUMINATING COMPANY
OF BOSTONCURTISS-WRIGHT
FLYING SERVICE

Westinghouse



Ford

Scott tissue

New York
New Haven
and Hartford
RailroadWESTERN
UNIONSTANDARD OIL
OF NEW JERSEY

LUX

CONOWINGO



Business leaders know from actual experience that they can depend upon Stone & Webster Engineering Corporation to meet required completion dates for construction projects. Construction is carried on economically and efficiently. Operation of the completed plant, office building, structure, or development meets every requirement. Our personnel, with a background of over one billion dollars' construction experience, is of a calibre well suited to work with your entire organization.

During the last ten years, more than 75% of our work has been for concerns not connected in any way with Stone & Webster interests. Our service is immediately available to you for any problem in modern building and engineering work.

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INCORPORATED

TABLE OF CONTENTS

Baltimore, Md., September 18, 1930

EDITORIALS

A Constructive Program of Municipal Improvement.....	Cover Page
Cheaper Credit for the Cotton Producer.....	41
"Uniform State Inheritance Tax Laws".....	42
Preventable Soil Erosion Impoverishing Nation's Farms.....	42
A Disquieting Soviet Manifesto.....	43
Sugar Trade Uses More Cotton Bags.....	43

NEWS and FEATURE ARTICLES

Soil and Water Conservation Work in Texas.....	By M. H. Gossett	44
Simplified Practice Aids Industry.....	By Edwin W. Ely	46
Contract Awarded for 80-Mile Transmission Line.....		47
Building 11-Mile Gas Pipeline in Texas.....		47
Some Matchless Features of Florida.....	By Hugh Hammond Bennett	48
Deep Wells a Dependable Water Supply.....	By H. L. Miller	51
\$750,000 Elevator Construction Program at Louisville, Ky.....		51
Permanent Forest Industry Being Developed in the South.....	By S. J. Hall	52
Tennessee River Project Outlined.....		54
Merger of Oklahoma Oil and Gas Companies Planned.....		54
\$3,250,000 Arkansas State Hospital to Be Erected.....		55
Do Industrial Plant Repairing Now.....	By W. F. Schaphorst	55

SPECIAL DEPARTMENTS

Construction, New Industries and Contracts, 15 Pages, Beginning on Page 61

Letters From Our Readers.....	56	Machinery, Proposals and Supplies Wanted..	73
Iron, Steel and Metal Market.....	57	Industrial News of Interest.....	74
Highway and Motor Transport.....	59	Trade Literature	75
New and Improved Equipment.....	60	Financial News	78

Classified Reference for Buyers..... 96

Alphabetical Index to Advertisers..... 113

MANUFACTURERS RECORD

RICHARD H. EDMONDS, Editor

Published Every Thursday
by the

MANUFACTURERS RECORD
PUBLISHING CO.

MAIN OFFICE
Manufacturers Record Building,
Commerce and Water Streets,
Baltimore, Md.

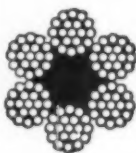
BRANCH OFFICES
Chicago—11 S. LaSalle St.
New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$1.00 a year. For other foreign countries, add postage \$3.50 a year.

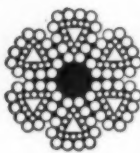
PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS

Member A.B.C.

"LESCHEN" WIRE ROPE



Leschen Wire Rope is made in various grades and in numerous constructions in order to meet all conditions. Tell us how you use wire rope and we shall be glad to suggest the kind that will give you the best results.



Established 1857

A. LESCHEN & SONS ROPE COMPANY

5909 Kennerly Avenue
ST. LOUIS

New York

Chicago

Denver

San Francisco

LEADITE

Trade Mark Registered U.S. Pat. Office

For Jointing Cast-Iron Water Mains
Saves at Least 75%

Leadite Tested and Used for Over 30 Years

Leadite Joints Improve with Age

The Leadite Co., Land Title Bldg., Philadelphia, Pa.

"See our Full Page Ad in 2nd issue each month"

No Caulking

FREIGHT RATES

(One of the most important factors in industrial development)

ARE YOURS RIGHT?

Consultation involves no obligation.

CHAS. S. ALLEN

FREIGHT RATE ADJUSTMENTS

Phone:
Vanderbilt 6886

230 Park Avenue
New York, N. Y.

HORTON TANKS



Ellipsoidal-bottom tanks for municipal service, in standard capacities up to 2,000,000 gallons. Standpipes, storage tanks and steel plate work.

CHICAGO BRIDGE & IRON WORKS
Birmingham 1530 Fifth St., North
Atlanta 2145 Rhodes-Haverty Bldg.
Dallas 3308 Magnolia Bldg.
Cleveland 2216 Midland Bank Bldg.
Chicago 2106 Old Colony Bldg.
New York 3113 Hudson Terminal
Detroit 1510 Lafayette Bldg.
Philadelphia 1619 Jefferson Bldg.
Boston 1510 Consolidated Gas Bldg.
San Francisco 1040 Rialto Bldg.

Ask for a copy
of our booklet,
Gravity Water
Supply

Actinic Glass

for Textile Mills

Manufactured by
**PENNSYLVANIA
WIRE GLASS CO.**

Will retard undesirable
chemical changes, such
as fading of colors

Distributed by

**HIRES TURNER
GLASS COMPANY**
PHILADELPHIA, PENNA.

Rochester Washington Albany
Baltimore

or through any glass jobber

No. 4

Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVIII No. 12 }
Weekly }

BALTIMORE, SEPTEMBER 18, 1930

{ Single Copies, 20 Cents.
\$6.50 a Year. }

Cheaper Credit for the Cotton Producer

COTTON sells for cash but is grown mainly on credit. Each successive cotton crop, before the ground is prepared for its planting, is largely financed by local bankers and merchants. They lend money for fertilizer, for other supplies and even rations, and for labor requirements of cultivation and harvesting. Because cotton has always been a "cash" crop, in that there is an open market for its disposal, bankers and others will lend money to farmers of the South to produce cotton when they prefer not to lend on some other crop which is not so readily salable. That is why it is so difficult to get Southern farmers to curtail cotton acreage in the face of large carry-overs of previous seasons. It is the result of a condition which grew up following the Civil War when the South was poverty-stricken, and the agricultural South has never been able to work its way out of such an uneconomic system.

Therefore, credit plays the most important role in the cotton-growing industry of the South. Often the success of a cotton grower or his failure to make a profit on the crop depends upon his ability to secure credit on favorable terms. When money is scarce the cotton farmer pays dearly for what loans he can get on the crop he hopes to make provided weather conditions are favorable. Under the circumstances, the banker and the merchant also take their chances on the weather and on the price cotton will bring at the maturity of the cotton grower's loan. Theirs is not a bed of roses, but in the main they are protected, while the farmers, if prices are favorable, get what is left. Necessarily, credit is expensive to the producer of a crop of a nature so highly speculative but nevertheless it is complained Southern cotton farmers have been charged, for the use of money, rates which were out of proportion to the risk involved to the banker and other credit sources.

The point we wish to emphasize is that when money is plentiful we believe it to be the duty of banking interests to make it as easy as possible for the cotton farmer to secure loans on his crop. Supply and demand govern in money as in any other commodity. Unless money is kept at work, it is a costly product. At the present time, with money plentiful, it should be loaned at low rates of interest. The government

through its various channels is offering money on easy terms under restricted regulations.

We believe a courageous step by the Federal Reserve System could be taken. Through the lessening of the discount rate of the Federal Reserve branch banks in the cotton-growing region of the country, an opportunity would be afforded the cotton grower of protecting himself against forced sale of his crop at harvest and at present low prices. This would be a stabilizing influence as well as an aid toward creating better business conditions not alone in the South but throughout the country. We have seen the discount rate lowered in the Eastern money centers of the country, with a consequent stabilizing effect on security prices and a distinct benefit to business. We have seen the discount rate lowered in the Middle West at harvest time to aid the grain growers of that section in the orderly marketing of their crops. Why not take similar steps in the cotton-growing region of the South?

It is not now too late to inaugurate an easier credit plan. The cotton-picking season is in full swing and we believe such a step would be of marked benefit in stabilizing all business, for the Southern cotton-grower would have an opportunity further to protect himself and be able to market his crop over a longer period, not having to sacrifice his cotton. His value as a potential customer of the producers and distributors throughout the United States would be greatly enhanced. Under the circumstances, with cotton selling at about the cost of production, we believe there rests upon the suppliers of credit in the South the responsibility to offer cotton producers this cooperation in working out their problem.

In the meantime, between now and the planting of next year's cotton crop, let every banker and merchant approached by a farmer for a loan to produce another crop secure an agreement that will assure an adequate curtailment of acreage.

According to the government's crop report of September 8, a cotton crop of 14,340,000 bales is forecast for the United States. This is 22,000 bales less than were in prospect on August 1, 488,000 bales less than last year's crop, and 688,000 bales less than the average crop of the five years, 1924 to 1928. Condition is reported as 53.2 per cent of normal, which is 2.2 per

cent of normal below last year on the same date. Preliminary estimate of acreage left for harvest is 44,791,000 acres, abandonment after July 1 this year being estimated at 2.2 per cent compared with average abandonment for the past ten years of 3.5 per cent.

The crop generally is maturing and opening quite rapidly, and there are many complaints of unripe bolls opening prematurely because of dry weather; this is especially true in the central part of the belt where the drought has been worst.

Since the foregoing was put in type it is announced that the Dallas Federal Reserve branch bank has reduced its discount rate from 4 to $3\frac{1}{2}$ per cent. This is a move in the right direction.

"Uniform State Inheritance Tax Laws"

THE plan for continuance of the Federal Inheritance Tax law, as "a temporary measure until the States can pass a uniform law," is further discredited by the disclosure that the 48 States have enacted only two uniform laws out of the many which have been proposed, these two being the law of negotiable instruments and the law of warehouse receipts. "And these have been so amended and interpreted as to destroy in large part the uniformity," comments John W. Davis, once candidate for President.

The present Federal law was enacted on an argument in Congress that within five years the States would adopt a uniform Inheritance Tax law and that Federal inheritance taxes then could be dropped. The present Federal law still stands, in the face of resolutions adopted by the Legislatures of 26 States asking Congress to repeal the Act. A majority of the members of 15 other State Legislatures also petitioned for repeal. The Federal law has been denounced by the United States Chamber of Commerce, the American Bar Association, the Investment Bankers Association, the National Association of Manufacturers and other great organizations. Yet it still stands.

Arguments that the States will adopt a uniform law within five years are demonstrated to be fallacious. Forty-four laws have been proposed by the National Conference of Commissioners on Uniform State Laws for uniform enactment by the States, and no doubt an equal number have been proposed by various other organizations; yet only two have gone through. Only 21 States have agreed that automobile drivers should be licensed, and there is no general acceptance of the minimum age for the licensee. Agreement by the States on inheritance taxation may reasonably be said to be out of the question.

While the intent of the Federal law is avowedly to compel the States to enact inheritance legislation themselves, the Wall Street Journal has described it as an attempt to blackmail Florida. Above all its other evils, the Federal law is admittedly coercive.

It is to be hoped that the incoming Congress will

see the justice and necessity for repealing the present law and thus leave to individual States the question of whether or not they will have an inheritance tax, a hope the MANUFACTURERS RECORD has previously expressed and now emphatically repeats.

Preventable Soil Erosion Impoverishing Nation's Farms

A BRIGHT spot on the agricultural horizon is the increasing interest manifest in prevention of the enormous waste of soil fertility through the washing away of farm lands. The cost of this soil erosion in depleted plant food amounts to hundreds of millions of dollars annually. It is estimated that three-fourths of the tillable area of the country is affected, and unless preventive measures are immediately taken, this land will in time be as worthless as the 17,000,000 acres of formerly good land that has been gullied and depleted to such an extent that its owners cannot afford to reclaim it. One record showed that a single rain washed away 17 tons of soil per acre. Is it any wonder that the country's farms become impoverished through neglect to adopt and use effective methods of terracing to curb this washing away of soil that nature has taken hundreds of years to build? How puny seem our efforts to replace and build up soil fertility when the rich humus is allowed to run off without a check.

Practical plans to reduce losses are now being worked out by the Department of Agriculture, in cooperation with States and landowners. Useful data is being gathered, and through county agricultural agents and other sources farmers are taught how to apply methods suitable to their particular need. Contour plowing, and terracing thrown up with simple equipment not only stops the run-off of rich land, but properly terraced land serves the further purpose of helping to conserve moisture in times of light rain and thus it affords a measure of protection during prolonged periods of drought.

While there is much that needs to be done, it is encouraging to know that soil erosion prevention methods are beginning to show results. Among the states making progress in this work are Kansas, Oklahoma and Texas. Oklahoma is said to be the first state to complete a soil erosion survey. It was found that 13,000,000 acres out of the 16,000,000 acres in cultivation were affected to some extent.

Elsewhere in this issue an account of the soil and water conservation work in Texas is given by M. H. Gossett, president of the Federal Land Bank of Houston. Due to the work inaugurated by the Conservation and Terracing Department of that bank in cooperation with the A. & M. College, more than three times as much land has been protected from water losses in the past three years as during the previous 20-year period. This offers a practical lesson of great value to interests having it in their power to serve the farmers of the country through helping them to understand the importance of conserving soil fertility.

A Disquieting Soviet Manifesto

JUST back from a visit to Soviet Russia, United States Senator Burton K. Wheeler of Montana was quoted by the New York Times, September 4, as saying:

"Russia is the greatest potential market for American goods in the world, and we are just a bunch of suckers, to use a slang expression, if we do not recognize them * * * From a commercial standpoint, we are losing millions."

On another page of the same issue, the Times published a special wireless dispatch from Moscow, capital of the Soviet, opening as follows:

"On the heels of a long series of reports in the press in regard to backwardness and shortcomings in different branches of industry, comes a manifesto from the central committee of the Communist party designed to lash sluggards into action and sting them into renewed efforts."

Assigned as the reason for laying "the lash" on the downtrodden "sluggards" are: "The growth of industry in the first ten months of this year has been only 27 per cent, when the plan calls for 32 per cent; capital construction has fallen way below the mark; the chemical industries, the coke, gas and chemical trust machinery and the agricultural machinery trusts carried out only half of the program in the first three-quarters of this year," as the Times report had it.

Causes for this "sharp backwardness" in industry and for "the holes in its economic structure" are "absence of energy and initiative in the mobilization of internal resources, inefficient use of present equipment, poor and careless management and many accidents due to criminal carelessness." Engineers are accused of "actually helping in counter-revolutionary work of sabotaging;" cooperatives are blamed for "not improving the food supply for the workers;" leaders are charged with "inability to organize the growing activities of the working class," to quote from the manifesto as given in this dispatch.

It is rather disquieting to learn that such is the confessed condition in the Communist land to which American industries have extended credits already aggregating many hundreds of millions of dollars, and in which international financiers have induced American investors to risk hundreds of other millions.

Therefore, viewed in the light of the reported manifesto of the Communist Central Committee that all is not well with the Soviet development program and the implied American credit involvement, Senator Wheeler's assertion that "from a commercial standpoint we are losing millions" would seem to be more to the point than the meaning he intended to convey.

The Baltimore Sun, in its issue of September 7, carried a special article, written from Moscow by Marc T. Greene, under the heading, "How Foes of Russia Help Her Carry On." The article is an indictment of American business methods, in which Mr. Greene stresses the paradox of our willingness to do business with Soviet leaders while at the same time realizing that the sole purpose of Communism is to destroy existing government. Mr. Greene points out

that without the assistance of foreign technical aid and equipment sold to Russia, the collapse of the five-year program of the Soviet Government would be most likely to occur. "And so, then, if it is desired to strike the Bolsheviks a blow in a vital part, the weapon is ready at hand—the economic weapon. Let the world segregate Red Russia economically." Mr. Greene says that the Soviet leaders believe there is not much likelihood of that single weapon being used against them. "Thus their all-sufficient psychology. Thus their ever-strengthening 'offensive against the world.' It raves and rails against them and yet assists them with all the material resources at its command." See the inconsistency of it all from their viewpoint?

"They are a 'menace,' as we think. They are trying to overthrow our Government, perhaps; to 'revolutionize' the world beyond any manner of doubt. Many of us hold them enemies to civilization itself. Yet we will take their money as fast as we can get it and lend them ours in the shape of credit up to hundreds of millions of dollars."

Is it any wonder that Soviet leaders have convinced themselves that Communism will conquer the world in time?

Sugar Trade Uses More Cotton Bags

ACCORDING to Lamborn & Co., Inc., sugar brokers of Savannah, the popularity of the 100-pound capacity cotton bag for sugar is growing each year. In a letter to the MANUFACTURERS RECORD the company writes:

"We thought it might be of interest to you to know that the Savannah Sugar Refinery was the first to start packing sugar in 100-pound cotton bags, and now that all sugar refineries use cotton bags to some extent, and some of them use a larger percentage of cotton than burlap, the Savannah Refinery really deserves credit for this change."

"It makes no material difference to us as brokers, or to the Savannah Sugar Refinery as manufacturers, whether the trade prefer their sugar in burlap bags or cotton bags; but, as you know, burlap is an imported commodity, while cotton is of domestic origin."

Beyond this, moreover, is the fact that other industries are beginning to appreciate the advantages of the use of cotton bags and wrappers. The benefits do not accrue to the cotton raisers and distributors alone, but also to the sugar and other industries which make use of the cotton bagging.

The wider use of cotton bags and containers for sugar, potatoes, cement, etc., and for the wrapping of the cotton bale itself, has long been urged by the MANUFACTURERS RECORD. Lamborn & Company have reinforced this idea not only in advice to the sugar trade, but also by actual practice, which is a most convincing form of argument.

Kindly words, sympathising attentions, watchfulness against wounding men's sensitiveness—these cost very little but they are priceless in their value.—F. W. Robertson.

Soil and Water Conservation Work in Texas

A Discussion of What Has Been Accomplished and Its Significance to the Agriculture of the State

By

M. H. GOSSETT,
President, Federal Land Bank
of Houston

I HAVE traveled by auto across the delta valleys of the Trinity, Brazos and Colorado rivers, and through the Gulf Coast counties of Texas, I have traveled the higher lands between, covering an elevation of 10 feet above sea level to 3700 feet in the Amarillo plains country, with a difference in average rainfall per annum of from 45 inches in the east Gulf counties to 21 inches in the northwest semi-arid plains, a distance of 800 to 900 miles from source to mouth of these rivers. Rivers draining less area but with similar topography, except the Neches, are the Guadalupe, San Antonio and Nueces.

Value of Farm Terracing

It is my opinion that all farming areas in Texas that would not be benefited by terracing, need drainage. This opinion is strengthened by the fact that, on the Spur Experiment Station it is found that there was an average loss per year of 25,362 pounds of soil per acre, over a three-year period, on land sloping two feet in 100 feet, planted to cotton. In 1928, a field with a three inch fall per 100 feet along terraces produced 293 pounds of seed cotton per acre. A field with level terraces produced 466 pounds per acre, and a field diked in so that no water could escape produced 586 pounds. Apparently, the soil fertility was the same in all three fields, so we must conclude that the difference in yield was in direct ratio to water conservation. Consequently, in sections of heavy rainfall, or during periods of heavy rainfall, terraces pay on soil conservation; and in sections of low rainfall, as in the Spur territory, or periods of low rainfall, terraces pay on water conservation.

Soil erosion on a two-foot slope in 100 feet was at the rate of 6 inches in 68

Since the organization of the Conservation and Terracing Department of the Federal Land Bank of Houston, in May, 1927, in cooperation with the Agricultural Engineer of the Extension Service of A. & M. College, some 500 conservation meetings have been held in 170 counties of the State. Chambers of Commerce, vocational agricultural teachers, railway agricultural agents and business interests in general have been active in the campaign. In three years more than three times as much land has been protected from erosion and water losses as during the previous 20 year period. Texas now has something more than 4,000,000 acres, or over 12 per cent of all land in cultivation, protected by terraces or contour farming.

Major L. A. Jones, senior drainage engineer of the Bureau of Public Roads, Washington, states that Texas at this time has one-third of all the terraced land in the United States.

The year 1930 has shown a very limited rainfall. In the western part of the State are many areas with practically no crops except on terraced land. This has given new stimulus to the work.

years and this is less than the average slope of land planted to cotton in the State. In the higher altitudes, with small rainfall, terracing conserves the moisture and insures better crop production, and at the same time prevents erosion of the soil. In the plains country of northwest Texas, where wheat is the major crop, farmers are learning that the conservation of moisture justifies the cost of terracing, since if moisture is conserved erosion is stopped.

This generation owes much to the next in the matter of soil conservation; yet, we complacently permit the life sustaining qualities of agricultural lands—the first six inches—to be wasted and washed into the sea. Ours is a new country and lands have been plentiful and cheap. If and when the top soil of a field is washed away, another field of rolling or undulating land is fenced and the process of mining the soil is again repeated.

Farming Submarginal Land Costly to Agriculture

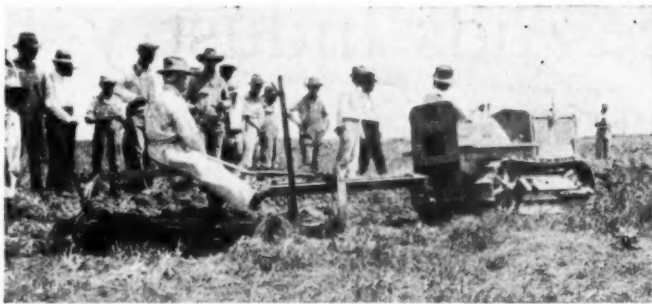
Regardless of whatever type of farm legislation is enacted, the fact remains that quality prices are obtained only from quality products; that quality products cannot be produced from scrub or submarginal land. Just so long as we allow soil fertility to be leached and washed from our farm lands, we shall find farmers in financial distress which no type of farm relief legislation can cure. Furthermore, a farmer trying to make a living and support his family on poor, thin, washed land, submarginal in quality, which requires as much labor and which produces less than half of the per acre product of rich, fertile lands, will find his mental attitude and processes submarginal. He may become



A Well-Terraced Farm in West Texas. Terraces and Rows Run on Level to Conserve All Rainfall.



Terraces Run on Level, Showing Furrows Level Full. Picture Was Made 24 Hours After a 1.2 Inch Rain.



Dealers Furnish Tractors and Terracing Machinery to Conduct Terracing Demonstrations on Texas Farms.



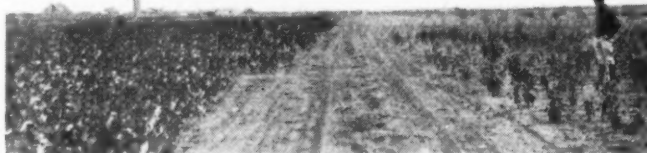
Counties Cooperate in the Terracing Program by Renting Road Machinery to Farmers at Cost.

the prey of demagogues and ready to embrace any proposed remedy, feeling that any change in social or governmental affairs can have no terrors for him.

Crops produced on sub-marginal lands, without profit, pull down the average price of such commodities on the market, thus making one of the largest economic problems with which agriculture has to contend. Many farmers are attempting to succeed in their business under these impossible conditions and the sooner they abandon the cultivation of such farms the better it will be for them and the community and for agricultural conditions generally. Such lands should be turned back to grass or forests, and even then terracing will speed up the restoration to some useful purpose.

We of the Federal Land Bank feel some pride in the resolutions passed at the convention of the American Society of Agronomy, at Washington, two years ago, wherein the action of the bank was commended as follows: "We especially commend the statewide program put in force in Texas by the Federal Land Bank of Houston in causing terraces to be built and in otherwise inducing all farmers who secure loans from it to do all in their power to prevent losses from erosion, and that we respectfully recommend their project to the consideration of all other Federal Land Banks, and to all other agencies engaged in loaning money to farmers on land or for production credit."

It may be said that primarily our motive was selfish—to conserve securities on which we have loans; but at the same time it is in line with the most vital and useful movements. Many other mortgage agencies doing business in this district have incorporated in their mortgages almost literally the provision authorizing calling of the loan before maturity if the borrower through neglect permits the security to depreciate in value by erosion to a point of jeopar-



Yields at Cotton State Experiment Station; Terraced Land 426 Pounds Per Acre, Unterraced Land 154 Pounds Per Acre.

dizing the security of the loan. We appreciate greatly the splendid cooperation we have had from the A. & M. College, its faculty, its extension service, the experiment stations and the press of the State.

Waste by Erosion

When land owners and tillers of the soil realize the indescribable, inexcusable and irretrievable waste which has been going on for generations, and wake up to the folly and blunder of it all, let us hope and believe that intelligent, organized, persistent terracing campaigns will demonstrate the remedy. In traveling by train or auto, one has only to look out on abandoned fields in sections which were settled 50 or less, years ago, to discover the tragedy of needless waste. This is true not only as to rolling sandy lands, but also in the black land belt, once supposed to resist erosion, gullies are in evidence and the once black loam or waxy soil is turning to tan or clay. To reclaim such fields now will require a greater expenditure than the lands cost 50 years ago, and a longer number of years to rebuild soil fertility than was required to wash it away.

Our deeds of trust give us the right at our option to call and mature any loan where the need of terracing is neglected, but we prefer to pursue a constructive policy and insist that the owner save his farm and our security by intelligent selfishness, and do the needful terracing at the proper time and maintain a decent standard of living.

We have arranged for each of the 350 National Farm Loan associations which have endorsed all loans made through them, to make a check-up on the physical condition of all securities and thereby discover certain types of farms which need terracing, and to have such work done, or the bank calls the loan. Already, we have learned that many of the physical securities in our total of more than 63,700 loans, in a gross of \$187,272,000, were in need of terracing, and it is gratifying to find a spirit of intelligent cooperation in this constructive work. A traveler over the State will observe newly terraced farms within the last 12 months equal to the number terraced within the preceding five years.

All thoughtful people, without regard to class or avocation, creditor or debtor, town or country, should help to stop this form of colossal waste of the world's wealth.

To Discuss New Developments in Locating Industries

Latest practices and methods in finding successful locations for industries will be brought before the two-day regional conference of the Industrial Property Division of the National Association of Real Estate Boards, in Detroit, October 27-28. Fred A. Gosnell, field supervisor of the Bureau of Census Distribution of the Department of Commerce, will report results of a study in an address "Using Census Figures as an Aid in Selecting Locations." Professor L. C. Sorrel, of the University of Chicago, will discuss "Recent Changes in Transportation and Marketing Affecting Plant Location." C. E. Ward, New York, industrial commissioner for the Erie Railroad Company, will address the meeting on "The Development of Industrial Property From a Railroad Point of View."

Simplified Practice Aids Industry

[The following article prepared especially for the MANUFACTURERS RECORD by Edwin W. Ely, Chief, Division of Simplified Practice, Bureau of Standards, Department of Commerce, explains the operation of this division and points out the significance of the simplification movement to Southern manufacturers, distributors and consumers. Elimination of waste and the adoption of simplified practice recommendations has been of great benefit to the industries of the nation. The MANUFACTURERS RECORD suggests that Southern manufacturers and others, if not now taking full advantage of opportunities presented through the Division of Simplified Practice, give greater study to its operation and the results obtained.—Editor MANUFACTURERS RECORD.]

By

EDWIN W. ELY,
Washington, D. C.

The function of the Division of Simplified Practice is to act as a centralizing agency through which producers, distributors and consumers may communicate with each other in solving problems of mutual interest and importance. As has been noted in "A Primer of Simplified Practice," issued by this Division, simplification and standardization are not synonymous. Standardization may be said to notate the sizes, varieties, dimensions and performance of a commodity, but whether the list of such standards be short or long, the use of all the items is in no way mandatory. Every-day business examines such lists through the eyes of commercial expediency and places major production and distribution emphasis only on those items which satisfy the maximum normal demand, at least in so far as spot stocks are concerned.

The Division of Simplified Practice cooperates with entire industries in studies of problems national in scope. As a means to that end, initial contacts are often made with municipal and state groups, to establish a nucleus for formulation of programs affecting the whole nation. For example, the Division is at present working very closely with the California State Chamber of Commerce along that line. The projects instituted as a result of surveys made in that one state by that group will form the basis for final Simplified Practice Recommendations of interest to industry and business in all the states. Also the Division is in touch with the various chapters of the National Association of Purchasing Agents. There are organized groups in other states, as Oklahoma and Missouri for example, that are similarly interested in originating Simplified Practice Recommendations. In the course of time it is expected that a large number of simplification projects will receive their initial impetus in state groups.

Publications issued by and descriptive of the cooperative service of the Division of Simplified Practice:

"A Primer of Simplified Practice";

"Simplified Practice, What It Is and What It Offers";

Parts I and II, "Results and Benefits of Simplified Practice";

Simplified Practice Recommendation No. 89;

"Simplified Practice, An Aid to Manufacturers and Distributors," published in the March issue of the Bureau's "Commercial Standards Monthly."

In securing signed acceptance to each program, this Division endeavors to reach all interested groups and every corner of the United States. A typical acceptance list is shown in Simplified

Practice Recommendation No. 89, devoted to "Coated Abrasive Products." The list shows that, in addition to a number of national trade associations, more than 100 concerns throughout the South, interested in abrasive paper and cloth, recorded with the Department of Commerce their desire to support the recommendation of the coated abrasive products industry. This is but one of more than 110 active Simplified Practice Recommendations. Southern manufacturers, distributors and users of other commodities are striving similarly to make successful those other simplification programs.

In view of the fact that time is the essence of the movement, it is not practicable to circularize every individual and group concerned with a particular project or commodity. We do search out a true cross-section of the industry, however, as an initial step. Further, additional work by the industry itself follows after publication of the book and its launching upon an active career.

Representatives of the Divisions of Simplified Practice have in the past addressed groups in the Southern States and also groups of national character holding periodic conventions within those states. None of the Division's activities has been centered wholly within any one state. However, that which would be beneficial, say, to the State of Missouri, would be helpful as well to groups within the states of Texas and Maine, and vice versa. Maximum results and benefits, we are convinced, depend on development of programs of national application.

Whatever the state from which emanates a proposal for simplification, the Division at once carries the news to every other state. Information disseminated by the Division has proved beneficial to concerns in all the Southern states. In consequence the Division is able to say that individual

SIMPLIFIED PRACTICE	
DECREASES	INCREASES
VARIETY OF SIZES	VOLUME OF SALES
INVENTORIES	TURNOVER
IDLE INVESTMENT	WORKING CAPITAL
SEASONAL OPERATION	STABILITY OF EMPLOYMENT
PRODUCTION COSTS	CONTINUITY OF OPERATION
SELLING EXPENSES	SELLING POINTS
MISUNDERSTANDINGS	QUALITY OF PRODUCT
ALL COSTS TO USER	PROFITS TO -
(*) INITIAL	(*) MANUFACTURER
(*) ACCESSORY	(*) DISTRIBUTOR
(*) MAINTENANCE	(*) PURCHASER
BY ELIMINATING AVOIDABLE WASTES	

ITEM	VARIETY REDUCTION FROM	TO	PERCENT ADHERENCE 1927 1928
WROUGHT IRON & WROUGHT STEEL			
PIPE VALVES & FITTINGS	20,000	19,830	99.15
SIZES & VALVES & FIT.	82	49	59.75
ROOFING TERNES	9	7	77.77
EAVES TROUGH & CONDUCTOR			
PIPE	21	16	76.19
IRON & STEEL ROOFING	292	179	61.30
STEEL REINFORCING SPIRALS	7	4	57.14
STEEL REINFORCING BARS	32	11	34.37
METAL LATH	125	29	23.20
SOLID SECTION STEEL WINDOWS	42,877	2,244	5.23
HOLLOW METAL DOORS	67	45	67.16
KALAMEIN DOORS	19	36	189.47
* ORIGINAL TOTAL NOT KNOWN.			

companies, and groups of companies in the South have been most helpful in adhering to many of the active Simplified Practice Recommendations. The proponent groups have felt that assistance and are appreciative of it.

The Division, acting as a clearing house, makes it possible for industries to help each other. When a state is not producing commodities, it is buying commodities that have their origin in other states. The states, with a common desire to eliminate waste through "team-work," mass action and cooperation, are in position to go forward with a common understanding toward an identical goal. Solidarity of purpose and intent is the result, with all industries helping each other without sacrificing that desirable element, healthy competition.

Fifteen additional simplified practice recommendations were developed by industry, during the fiscal year ending June 30, 1930, bringing the total number of general conferences to date to 127. Three of these recommendations were approved at general conferences of the industry concerned during the quarter ended in June.

The various industries have to date approved and adopted recommendations covering 113 commodities, while others are in process of acceptance.

Thirty-nine existing recommendations were reviewed by their respective standing committees during the past twelve months, 34 being reaffirmed without change for another year, and 5 were revised.

Surveys of production conducted on 25 simplification programs during the past fiscal year showed an average degree of adherence of 86.7 per cent. During the preceding year, the percentage for 26 commodities surveyed averaged 85.4 per cent.

The Department of Commerce, through its Bureau of Foreign and Domestic Commerce, has stationed district managers in over a dozen important centers in the South and is in constant touch with cooperative offices located at more than 20 other points in the South. Those representatives are ready to be of service to all who seek information and advice. Inquiries regarding simplification may be secured by application to the managers of the Depart-

ITEM	VARIETY REDUCTION FROM	TO	PERCENT ADHERENCE 1927 1928
BUILDERS' HARDWARE	6,948	5,130	73.99
ITEMS	100	29	29.00
FINISHES	944	570	60.38
MILLING CUTTERS	1,500	840	56.00
PLOW BOLTS	665	361	54.14
FORGED TOOLS - TOOL HEADS	120	10	8.33
EYE SIZES	248	115	46.37
TURNBUCKLES	421	182	43.23
CUT TACKS & NAILS - SIZES	423	121	28.60
PACKAGE WEIGHTS	5136	2178	42.41
SHOVELS, SPADES & SCOOPS	1351	475	35.15
FILES & RASPS	160	38	23.75
DIE HEAD CHAMBERS	1819	261	14.35
HACK SAW BLADES	10	6	60.00
SHEET STEEL	00	00	0.00
METAL SPOOLS	00	00	0.00
PACKING FOR CARRIAGE	00	18	180.00
MACHINE & LAG BOLTS	00	00	0.00
YEAR 1926. * YEAR 1927. * ORIGINAL TOTAL NOT KNOWN.			

ITEM	VARIETY REDUCTION FROM	TO	PERCENT ADHERENCE 1927 1928
TINWARE, GAL. & JAR WARE	1154	873	75.65
METAL FIBER FLASHLIGHT CASES	25	14	56.00
STEEL BARRELS & DRUMS	66	25	37.88
STEEL LOCKERS	65	23	35.38
WOVEN WIRE FENCING	552	69	12.50
PACKAGES	2076	138	6.65
HOT WATER STORAGE TANKS	120	14	11.67
RANGE BOILERS	130	13	9.99
BEDS & SPRINGS	78	4	5.13
ROLLER BEARINGS	00	172	0.00
* YEAR 1926. * YEAR 1927. * ORIGINAL TOTAL NOT KNOWN.			

ment's district offices or from the Division of Simplified Practice, Bureau of Standards, Washington, D. C.

SOUTHERN LOCATION OF DISTRICT OFFICES OF THE BUREAU OF FOREIGN AND DOMESTIC COMMERCE, UNITED STATES DEPARTMENT OF COMMERCE

City	State
Atlanta	Georgia
Baltimore	Maryland
Beaumont	Texas
Birmingham	Alabama
Charleston	South Carolina
Charlotte	North Carolina
Chattanooga	Tennessee
Clarksburg	West Virginia
Columbus	Georgia
Dallas	Texas
El Paso	Texas
Fort Smith	Arkansas
Fort Worth	Texas
Galveston	Texas
Greensboro	North Carolina
Houston	Texas
Jacksonville	Florida
Kansas City	Missouri
Lake Charles	Louisiana
Laredo	Texas
Louisville	Kentucky
Memphis	Tennessee
Mobile	Alabama
New Orleans	Louisiana
Norfolk	Virginia
Orange	Texas
Oklahoma City	Oklahoma
Pensacola	Florida
Port Arthur	Texas
Raleigh	North Carolina
Richmond	Virginia
St. Louis	Missouri
San Antonio	Texas
Tampa	Florida
Tulsa	Oklahoma

* Cooperative office.

80-Mile Transmission Line

Louisville, Ky.—The Louisville Gas & Electric Co. recently awarded contract to the Bates Expanded Steel Corp., East Chicago, Ind., for approximately 80 miles of transmission tower line from Louisville to Cincinnati, Ohio, involving about 2500 tons of steel. This order includes special fabricated steel towers, all galvanized, of the earth footing type, 65 feet in height, to carry three conductors for 133,000 volts. Shipment of the towers is expected to be completed within four and one-half months.

\$650,000 Hotel for Richmond

Richmond, Va.—The construction of a \$650,000 tourist hotel at Eleventh and Bank streets, this city, is projected by the Capitol Hotel Corp., chartered with an authorized capital stock of \$325,000. Plans for the building by Marcellus E.

Wright, Richmond, who is also vice-president of the new company, call for an 8-story brick and steel structure of 182 rooms and 119 baths, to occupy a site 177 by 42 feet. In addition to Mr. Wright, other officers of the corporation include J. Garland Hood, president; Charles E. Garrett, secretary, and David D. Hanes, treasurer.

Building 11-Mile Gas Line

Three Rivers, Tex.—An 11-mile, 4-inch gas pipeline to intersect the trunk line of the United Gas Co., Houston, is being built to Three Rivers to replace a 2-inch line. The Houston Oil Co. has completed a deep test well in the Cartwright field, 5200 feet, and is preparing to bring it in as a large producer. Should it come up to expectations, it will mark an extensive drilling campaign by the Houston and other companies.

Railroad Locomotive Shipments Gain

August shipments of railroad locomotives from principal manufacturing plants, based on reports received by the Department of Commerce, totaled 77 locomotives, as compared with 56 in July, 129 in August, 1929, and 34 in August, 1928. Shipments for the year to date amounted to 552, as compared with 517 for the same months of 1929, and 394 in 1928.

\$350,000 Hotel Addition

Macon, Ga.—Bids will be opened September 25 in the office of W. L. Stoddart, New York architect, for a \$350,000 addition to Hotel Dempsey here, to be erected for the Midland City Hotel Co. and Hotel Dempsey Co. The addition will be 10 stories, 50 by 100 feet.

Some Matchless Features of Florida

Its Scenic Resources

Not Yet Fully Realized

By

HUGH HAMMOND BENNETT
Washington, D. C.

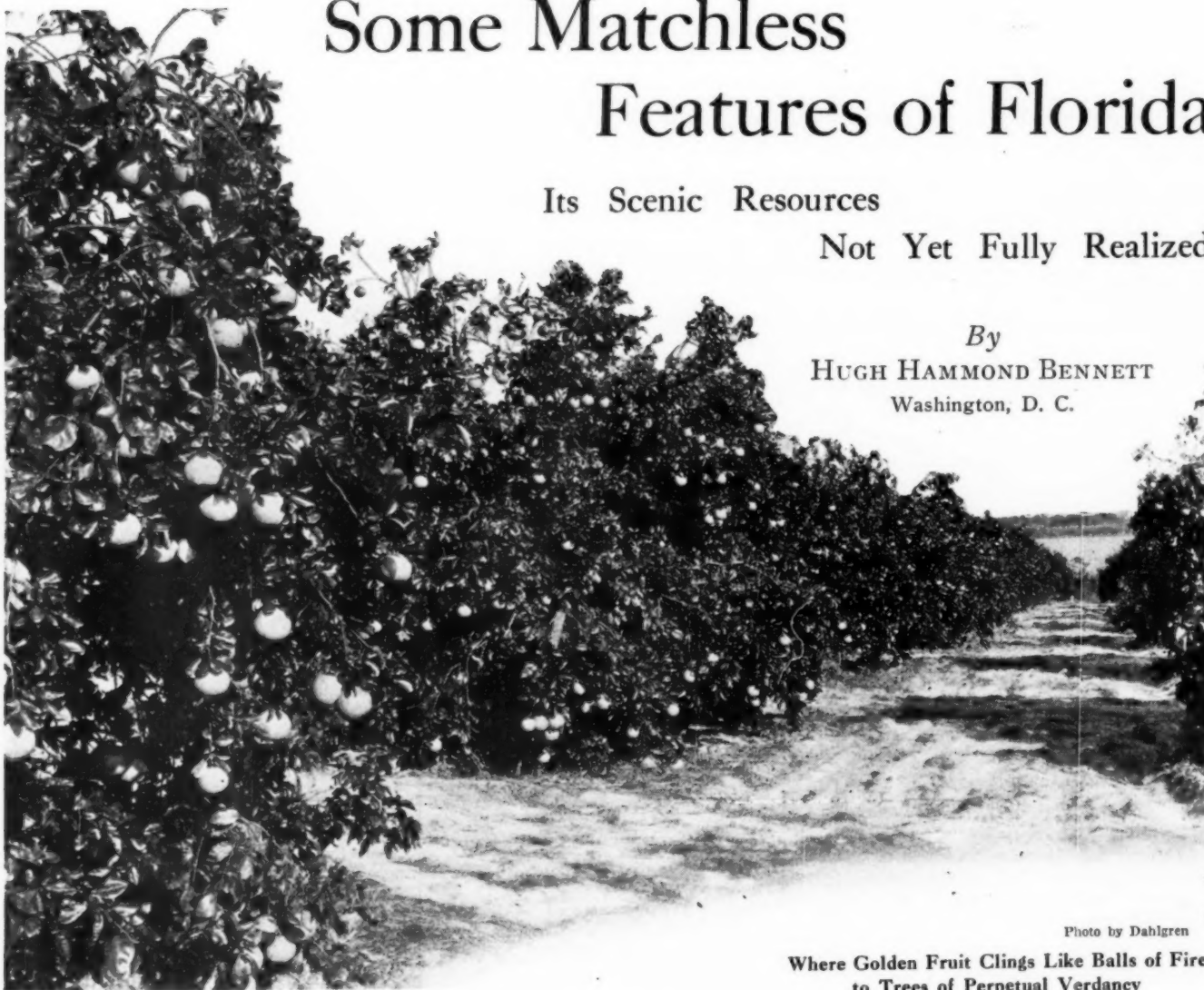


Photo by Dahlgren

Where Golden Fruit Clings Like Balls of Fire
to Trees of Perpetual Verdancy

THE Federal Park Service has under consideration the practicability of establishing a national park in Florida. Investigations toward this end have been carried out during the year in pursuance of the provisions of a bill presented by Senator Duncan U. Fletcher and passed by the last Congress. For this and numerous other reasons, increasing attention is turning toward the geographic and scenic details of the State that projects so deeply into the sub-tropic region.



Photo by Dr. E. T. Wherry

Where Nature Paints the Rocks With Ferns That Resemble Snow Crystals:
Istachatta Grottoes on the Withlacoochee River in Florida

The Heart of the Back-Country

Along the main highways of many large recreational areas it is frequently impossible to catch even a fleeting glimpse of the real "back-country," though it is in the back-country that Nature has been least disturbed. It is here that we find the "wild things," the most joyous woodlands, the richest bird life, the landscapes and vegetative features that have been so largely spoiled along the main roads. Taking Florida as an example,

it is well known to those who have penetrated to the deepest intimacies of the State, that most of the thousands of visitors fail to see numerous interesting and alluring parts of this region of vast natural variations, simply because many of these places are tucked away along the lesser roads and trails that cannot be traveled so easily as the splendidly surfaced highways. Literally, there are thousands of matchless landscapes, jungles, springs, rivers and streamlets that lie far back from the thriving cities.

A Land of Ferns

With its vast wealth of native plants, ranging from tropical and subtropical forms to those of temperate-zone characteristics, it is not surprising when botanists tell us that Florida is far richer in ferns than any other state. The hammocks of the southern peninsula region, together with the outlying keys, are not only rich in tropical woods, shrubs and vines; but they include 48 different species of ferns. These vary from the enormous leather-fern of the salty marshes to tiny, feathery species that grow lux-



Photo by U. S. Forest Service

Live Oaks and Spanish Moss, Near Rocky Bayou, Florida National Forest

uriantly and abundantly on the trunks and branches of trees, on decaying logs and even on projections of coralline limestone. Such strange abodes cause one to marvel at the haphazardry of Nature's

seedsman in these fecund woodlands, where an immensely diversified growth is the dominant note of the vegetative kingdom.

Unquestionably, the most beautiful of



Photo by Dahlgren

Air View of a Few of the Ninety-seven Lakes to be Found in the Environs of Winter Haven, Fla.

all America's natural growths of ferns are to be seen in isolated spots on the west side of the Withlacoochee River. At one place, near Istachatta, 14 distinct varieties, mostly tropical species, were seen on the tops and over the vertical faces of a limestone formation, carved, by weathering, into fantastic rock pinnacles, defiles and grottoes.

All of these are beautiful species; some are as exquisitely fragile as snow crystals. About these grottoes are clustered many kinds of trees, every branch of which is adorned with lacy Florida moss. At all times of the year birds are singing and flitting about this matchless spot. In spring the fragrance and beauty of yellow-jasmine, azalea and wistaria add to the magnificence of the incomparable bit of fairyland. And yet, this place is not visited by a dozen tourists in a year!

Florida's wealth of ferns is not restricted to its wild hammocks and isolated grottoes. Several kinds are grown commercially. Recently, this industry has become important in many localities, as at Tavares, Okhumpka, Montverde and Leesburg. They are grown under the shade of wooden slats, just as the fine grades of cigar tobacco are grown in northwestern Florida. The plants are heavily fertilized and kept moist by overhead irrigation. They are being shipped to the far corners of the nation.

A Land of Ten Thousand Lakes

In the central peninsula region, extending about 200 miles northward from the vicinity of Lake Okeechobee, large areas are literally strewn with beautiful lakes, many of which have no counterpart anywhere else in the world. To speak of the region as one of ten thousand lakes is merely to make use of a descriptive phrase. Actually, the number is far greater. A recently completed Government map of Lake County shows that within this one county alone, there are more than 900 lakes varying in size from about five acres to six miles across. Others too small to map, with the scale employed, range down to pools of less than an acre. Polk county is said to have 1200 of these charming freshwater lakes. The City of Winter Haven claims 77 within its immediate environs; 15 of these have been connected, providing a 50-mile boat trip. Many are entirely surrounded by clean, sandy slopes that rise sharply to uplands covered with pine, sabal and live oak. Others are surrounded by fragrant citrus groves and magnificent homes. Still others lie back from the main highways, delightfully sequestered amidst green forests of pine, palmetto and moss-draped oaks.

Rivers That Rise From the Ground

Every year thousands of tourists visit Silver Springs near Ocala, which is said to have the largest flow of any spring in

the world. From subterranean grottoes this beautiful spring pours out 370,000 gallons of crystal-clear water every minute. From Jacksonville, freight and passenger boats ascend Silver Run, whose waters come entirely from this prodigious spring. They dock, load and unload in the spring itself.

This is but one of numerous similar springs scattered over the State. One was visited by the writer in an isolated forest of hardwoods and sabal palmettos. Its upper limestone walls, as well as the rocky banks of the stream below the spring, were massed with marvelous growths of ferns and other evergreen plants. Far down in the clear water numerous fish were swimming among filmy water-plants, kept in perpetual and exceedingly graceful motion by the swirl of the rising water.

These springs are underground streams that come to the surface through openings in the basal limestone, which over large areas occurs as an underground platform. In places surface streams flow into similar openings, known as sink-holes, to disappear completely. Some of these reappear as "springs" at varying distances beyond the sinks; others continue to unknown places, even out beneath the sea. The ocean "boil" near Matanzas Inlet, south of St. Augustine, is supposed to be the outlet of a subterranean stream that has its source somewhere on the Florida mainland. At any rate, here rises, through briney ocean water, a spring of comparatively fresh water that can be seen from a considerable distance.

Lacy Hammocks

Many parts of Florida are characterized by hammocks, or island-like areas of mixed hardwoods, often miles across, such as Annutteliga Hammock and Chocohottee Hammock in Hernando County.

Such forests, for the greater part, are irresistible places. First sight of them may even cause the visitor to rub the eyes to be sure it is not a dream. From every tree swings silvery drapery of Spanish moss. The woods are flowing with lace and chiffon; their dress blends appropriately with the blithesome arias of feathered songsters.

In the more southerly hammocks, the northerner will find, if he looks, numerous unfamiliar trees and vines, many of which have habits of growth that are altogether astonishing. Some rise from rocky areas where no soil whatever can be seen. They send their roots deeply into the holes of honeycombed coral rock in search of soil. The very names of many of the trees are intriguing. We find, for example, blolly, gumbo-limbo, torchwood, stopper, lancewood, bitterwood, coral-bean, butterbough, tamarind, devil's claws, pigeon-plum and soapberry.

The Value of Scenic Resources.

No country, state or region can afford to undervalue or neglect its scenic features, especially where they are of a unique and superlative nature, as in the instance of Florida. Europe has capitalized on such things to a degree that would be unbelievable to thousands of those living in Florida and other parts of the Southeast, to whom the countless beatitudes of the region are accepted as casual matters. Some of our states have given due attention to their scenic resources, guarding them, building roads to them and advertising them.

Almost invariably, such efforts have been rewarded by good returns. Why shouldn't the others follow suit, particularly those that have within their boundaries, magnificent lakes, streams, forests and other out-of-doors features that probably cannot be duplicated anywhere else on the face of the earth.



Municipal Park Scene, Miami

Deep Wells a Dependable Water Supply

By

H. L. MILLER,
President,
Luitwieler Pumping Engine Co.,
Rochester, N. Y.

RECENT editorial suggestion in the MANUFACTURERS RECORD that cities and lesser communities should guard effectively against possible water shortage impels one experienced in water supply work to supplement the suggestion with a few practical thoughts. "Every community which has found itself threatened with a water shortage should leave not a stone unturned to increase its storage facilities," as the editorial put it, and it may be well to consider how an adequate water supply can be provided.

On the premise that all municipalities, great and small, should have a reserve or standby equipment on which to draw in time of drought, I would say from experience that extra wells should be equipped with pumps and be used occasionally throughout each year, to make sure they are in good working order.

In the construction and maintenance of a waterworks, an adequate and permanent supply of pure water can be obtained through (a) a surface water gravity system, (b) a surface water pumping system and (c) a subsurface supply pumping system. For the surface water gravity system, water is obtained usually from springs or elevated, uncontaminated impounding reservoirs or lakes; in the surface water pumping system, from lakes or rivers or other streams, sometimes with a purification plant; in the subsurface pumping system, from a deep, drilled well of the artesian type or from dug wells. Incidentally, in recent years the purification of water from running streams for

domestic use has made great strides.

The use of the subsurface well has spread rapidly in the last decade and still is increasing, an underground supply generally being more dependable than surface streams, particularly in dry years. Also, the rapid industrial expansion in the United States and especially in the South has made a heavier drain for water on surface streams which, together with the amazing development and use of hydro-electric power—again, especially in the South—makes conservation of surface water highly advisable.

Formerly, in many parts of the country, flowing artesian pure water could be obtained by deep boring, and this still is true in some parts of Florida and Texas, where tremendous capacities are found. In general, however, bored wells require pumping, although as a rule they are much less affected by drought than are surface streams.

Rarely is deep well water contaminated or raw water unfit for domestic use. Having developed a dependable source of subsurface water, the use of modern and efficient equipment and supplies is of prime importance. For instance, I recently visited a town that had antiquated equipment, where the standby connected load charge alone for a reserve equipment not in actual use equalled 15 cents per 1000 gallons on

all water used, besides the actual cost of pumping and maintenance. A modern system could be installed to pump all of their water at a cost of a few cents per 1000 gallons, including maintenance and depreciation.

The type and size of the necessary equipment for economical service depends on a number of factors, but in the modern days of universal cheap power and efficient pumping equipment water can be developed at a cost of a few cents per 1000 gallons, depending on the total pumping head or pressure required.

An efficient plant in steady service will soon pay for itself; a capital investment secured from reduced operating costs. Then, of course, the design and construction for durability and low maintenance costs must be considered.

The cost of the water is made up principally of: (1) Power cost; (2) maintenance expense and repairs; (3) labor attention; (4) depreciation; (5) interest on investment. There soon comes a time when the total of these items exceeds the first cost, the latter being of minor importance in determining the selection of the equipment.

Users of obsolete or inefficient methods or inferior equipment pay heavily for labor attendance, for unnecessarily large power consumption and for excessive repairs. Ignorance may have been bliss in the old days, but in these days it is much too costly.

Water cost is a large or small item of annual expense, depending on the methods used to obtain it.

\$750,000 CONSTRUCTION PROGRAM

Louisville Company to Build 715,000-Bushel Elevator

Louisville, Ky.—Ballard & Ballard Co., manufacturer of feeds for livestock and poultry, has inaugurated a \$750,000 construction program with the beginning of work on a 715,000-bushel elevator on Barrett Avenue north of Broadway. General contract for the elevator was awarded the Jones Hettelsater Construction Co., Kansas City, Mo. The structure will consist of 27 circular tanks, 17 feet in diameter, with 46 interestice bins of varying sizes, each 110 feet high. Plans also include a headhouse 147 feet high, two grain driers with a capacity of 500 bushels per hour, and a cooling tower. Construction will be of rein-

forced concrete. The project is expected to be completed within three months, with a force of more than 100 men employed initially and increased as the work progresses. The new elevator will give the Ballard company a storage capacity of 2,250,000 bushels of grain.

Plans \$500,000 Gas Service

Harrison, Ark. — The Southern Gas Co., Houston, Tex., applied to city council for a franchise to supply this city with natural gas, its plans calling for tapping a gas line from the Clarksville field at Combs, in Madison County, 45 miles from here. The company would also supply consumers in Green Forest, Berryville, and Eureka Springs and connect with another line at Roger. Proposed improvements are estimated to cost \$500,000.

\$250,000 Open Hearth Furnace

St. Louis, Mo.—Plans are being made by the St. Louis Screw & Bolt Co. to install an open hearth furnace of 40 tons capacity, at a cost of approximately \$250,000. The new equipment will necessitate the employment of 25 additional workers, it is said. Improvements are to be completed by January 1, 1931.

\$700,000 Temple Begun

Independence, Mo.—Preliminary construction has started on a \$700,000 temple here for the Church of Christ, for which Norman L. Wilkinson, Kansas City, Mo., is the architect. Plans call for a structure 90 by 180 feet, to provide an auditorium to seat 3,000. Offices, lavatories, coat rooms, vestibule and other facilities will be housed in a segment on the front of the building.

Permanent Forest Industry Being Developed in the South

Is Recognized as Sound Source of Wealth and Prosperity

By

S. J. HALL

Jacksonville, Fla.



Planting Operations Under Way



At Work Burning Fire Lines

DURING the past few years the Southeast has become recognized as a region where well selected areas offer an excellent opportunity for timberland investment. This results from the predominance of the dual revenue pine species, and the long growing season, aided by suitable soil and moisture conditions. These factors constitute a favorable combination that cannot be duplicated elsewhere. Even low naval stores markets such as have existed for the past two years do not seriously curtail the substantial revenue to the landowner from second growth longleaf and slash pine; while the adjustment of production now in progress is expected to make this income even more attractive in the future.

A forest that will more than pay its way from naval stores production after reaching 9 inches in diameter and then yield its full return as timber after attaining pole, piling, or sawlog size, has to be recognized as an attractive investment, especially when it can be grown under fire protection and forest management so as to reach a merchantable size for turpentine within 20 to 25 years. Another advantage is that partial stocking of natural regrowth already exists so that commercial maturity is reached by sapling stands in 5 to 10



A Fire Tower, 100 Feet High

years, thus creating a continuous cycle without waiting for trees to grow from seed.

Another important investment feature of properly selected lands in this region is that there is found at the time of purchase sufficient merchantable timber immediately available to meet carrying charges including taxes, fire protection, and management expense, together with a satisfactory rate of interest on the investment while the entire area is becoming fully stocked. In some cases it is possible to do even better than this. A few properties have been managed to return the entire amount of the purchase price plus all carrying charges within a few years; this by salvage operations alone without injury to the growing stock or sacrifice of future yield.

A few far-sighted companies and individuals have realized and applied these possibilities during the past several years with the result that a specialized forest engineering service covering management methods and silvicultural data has been built up in connection with these projects. Special studies, both regional and local, have also been made on a large number of second growth properties throughout the region.

As part of this development,

THE JAMES D. LACEY COMPANY of Jacksonville is a subsidiary of James D. Lacey & Co., Chicago, with other offices and representatives in the important regions of the United States and Canada. The company was organized in 1880 by Mr. Lacey who is still active in the organization. The original business was dealing in timberlands. Later other departments were added to meet the many changes in the forest industries during the 50-year span since the business was started. Today the field of activity includes service as timberland factors, engineers, consultants, and managers with facilities for analysis and advice on timber problems anywhere. The company has investigated and reported upon more than 46,000,000 acres east of the Mississippi River, during the past six years.

the James D. Lacey Co., of Jacksonville, is retained by several large concerns to act in a consulting and advisory capacity and as forest managers by prominent landowners. Among this clientele are such companies as J. C. Penney-Gwinn Corporation, owners of some 147,000 acres in northern Florida; Georgia Forest Products Company, with holdings of 24,000 acres under intensive management in southeast Georgia; another 11,000-acre property adjoining the former; Forestry Associates, Inc., a syndicate of Florida business men having a 39,000 acre tract in north central Florida.

The most recent forest to be placed under their supervision is the purchase made by A. W. Budd of Philadelphia. This tract of about 14,000 acres, located within 25 miles of Jacksonville, is at present being intensively cruised and mapped preparatory to the making of complete forest working plans.

One of the first steps in forest management is to protect the property from annual fires. This prevents the destruction of millions of pine seedlings, which spring up after good seed crops and also permits the young trees to grow at a maximum rate. It has been found that annual burning retards the growth of small trees from 30 per cent to 40 per cent or more and that it prevents the establishment of reproduction on a large percentage of the land in the South.

Fire protection is accomplished by means of fire lines which break the property up into units or blocks and by fire towers from which an observer detects the fires as soon as they break out. A ranger or "smoke chaser" is dispatched to the fire promptly to put it out before it gathers headway. On dry, windy days a crew of emergency fire fighters has to be kept on call at all hours.

Thinning of over-stocked stands is an important silvicultural

measure in order to obtain the maximum yield. This work is done under the supervision of foresters at a relatively small expense. It is one of the most profitable forestry measures that may be practiced, as it insures a thrifty stand of trees ready for turpentine within ten to twelve years after thinning, whereas if left unthinned the rate of growth of the trees would slow up seriously and few of them would ever reach merchantable size. Lacey foresters have been supervising thinning operations on a number of properties for the last four years and during the past winter thinned a total area of about 50,000 acres. These operations are confined to the months of December and January in order to prevent infestation by bark beetles which are dormant during this period.

Planting of seedlings is limited to the restocking of barren areas or to secure replacement by more desirable species. In general, it is not necessary. The cost of this work has been reduced materially during the past few years and large areas may now be reclaimed by planting at a reasonable cost. The results have been uniformly satisfactory.

Longleaf and slash pine trees measuring 9 inches D. B. H. and up are worked for turpentine, either by direct operation or under contract with turpentine operators. These contracts permit only the most modern and conservative methods of working. By restricting the operations and using conservative methods the growth rate of the trees is not seriously retarded and a substantial income is obtained for the owner.

Pole and piling operations are also carried on to utilize the trees after the tur-

pentine value has been worked out. A revenue of fifty to sixty dollars an acre from this source is not uncommon.

Periodic inspections of all operations are made and a constant check is kept on the work to prevent the cutting of immature trees and to make sure of complete utilization of all products.

In addition to the regular forestry routing work, several of the Lacey foresters spend a part of their time working out improved methods of operating practice. Forestry in this country is in an elementary stage as compared with the European practice and research work is of vital importance. Government tests and treatises are closely followed and experiments are conducted by the company's men.

The management of properties purchased as game preserves is an increasing phase of the Lacey work. These properties are usually held by clubs or individuals for the sole purpose of providing hunting preserves or recreation areas. By applying forest management practice a substantial revenue may often be obtained and the timber value of the property greatly increased without detriment to the hunting facilities.

An excellent example of this work is seen on the property of Frederic A. Dallett in eastern South Carolina. J. T. Kollock, Charleston representative of the James D. Lacey Company, is directly supervising all logging and improvement cutting operations. Mature and defective trees are being removed to prevent further decay or deterioration in value. The opening up of the stand permits the smaller trees to grow more rapidly and thus maintain a fully stocked forest continually. All dead trees or wind-falls are utilized; the limbs and tops from trees cut are piled and burned after available cord wood is taken out. Game birds are encouraged by the prevention of fire.

Right—A view in Satilla Forest—the result of four years of protection. Planting of seedlings is limited to the restocking of the barren areas.



Below—Young longleaf stand thinned for turpentine and pole production. Thinning is important as a silvicultural measure to obtain maximum yield.



Tennessee River Project Outlined

District Engineer Communicates With Interests Concerned—Congress Authorized \$5,000,000 to Begin Work—Government May Participate to Extent of \$75,000,000 With Private Interests

Chattanooga, Tenn.—In furtherance of a provision of the River and Harbor Act of July 3, 1930, which adopts a project for improvement of the main stream of the Tennessee River and directs the Chief of Engineers to ascertain and report to Congress on the first day of the first regular session of the 72nd Congress December 7, 1931, advising as to the prospective co-operation offered by responsible interests under the Federal Water Power Act in the program of construction recommended by the Chief of Engineers providing for a 9-foot waterway by means of high dams for the combined interest of navigation, power and flood control, which may be substituted for the low dams for navigation only, the United States District Engineer Office, Chattanooga, is sending letters to the governors of Kentucky, Tennessee, Mississippi, Alabama, Georgia, South Carolina, North Carolina and Virginia; mayors of principal municipalities on and adjacent to the Tennessee River; county judges in the basin; power companies believed to be interested; chambers of commerce and other civic organizations, and to

large producers, shippers and others who may be interested in the improvement of the river, requesting an outline of any prospective co-operation they may have in view.

Congress authorized \$5,000,000 to be appropriated for beginning work on the project and expenditures in excess of this sum may be made only after authorization in subsequent Congressional acts. Accompanying the letter sent to the various interests mentioned, is a chart showing the inland waterway system for the eastern part of the United States, including the proposed project for the main stream of the Tennessee River, the 300-mile radius for the distribution of power from the basin, and a summary of ultimate benefits indicated by the report, now in the hands of the public printer. Three charts, accompanying a report on survey, show the layout of projects in colors for the main stream and tributaries and high dams which may be substituted for low dams on the main stream. Prospective ultimate benefits for the river and its tributaries, as set forth by the district engineer's letter, include the following: Naviga-

tion—652 miles of 9-foot waterway on the main stream and ultimately 1260 miles of 6- to 9-foot waterways on tributaries if required after power projects are developed, with prospective commerce by 1950 estimated at 17,800,000 tons annually on the main stream. Power—About 2,000,000 horsepower on the main stream and 2,000,000 horsepower on the tributaries. Flood Control—Effective protection on the main stream and more or less effective protection on major tributaries below reservoir projects, including 60 towns and cities, 437,913 acres of cultivated land, 11 railway bridges, 211 miles of railway track, 116 highway bridges and 63 miles of main highways. Industries—Cheap water transportation and power, abundant raw materials from agriculture, forestry and mines, which offer excellent opportunities for industrial development.

The report indicates that prospective commerce on the main stream will justify the Federal Government to participate in the development of the high dams on the main stream to the amount of the cost of low dams for navigation only. A satisfactory system of low dams with large locks for the main stream would cost approximately \$75,000,000, it is estimated. Major Lewis H. Watkins, the District Engineer, closes his letter with this paragraph: "Within recent years the South has begun the development of industries. Already it has made great progress. It needs industries for the manufacture of its abundant products of agriculture, forests and mines. The development of the Tennessee River and its tributaries for the combined interest of navigation, power and flood control should play an important part in the industrial development of the South."



Inland Waterway System for Eastern United States
Showing existing and proposed projects, including project for main stream of Tennessee River.

Oil and Gas Companies Plan Merger

Tulsa, Okla.—Stockholders of the Independent Oil and Gas Co. of this city will meet September 30 to act upon a proposal for the merger of the company with the Phillips Petroleum Co. of Bartlesville, Okla. According to the terms of the proposal, stockholders of the Independent company will receive 76 shares of Phillips Petroleum Company stock for each 100 shares of Independent Oil and Gas Co. stock held. The consolidated company will have more than 3600 producing oil wells, with a present potential production of more than 120,000 barrels daily of crude oil, varying proportions of which are shut down to comply with regulations of the different state proration committees now in effect. It will have substantial producing areas in Texas, New Mexico, Kansas, Oklahoma, Arkansas, Kentucky

and Louisiana, aggregating about 90,000 acres, all connected or in close proximity to one of the company's refineries at Borger, Tex.; Okmulgee, Okla., and Kansas City, Kans., each served by owned pipelines aggregating over 1100 miles. The company will also own a half interest in the Texas-Elf Carbon Co., a large producer of carbon black.

BIG GRAIN ELEVATOR AGAIN IN SERVICE

**Western Maryland Railway Quickly
Repairs Explosion Damage**

Following an explosion recently that caused about \$250,000 damage to the big grain elevator at Port Covington, Baltimore, of the Western Maryland Railway Co., a force of 300 men immediately began clearing away debris, working in day and night shifts. With the aid of a Western Maryland wrecking crew, they were enabled to move 140 carloads within two days. While this work was going on, contractors were erecting scaffolding about the south wall of the building, preparing forms for a 212-foot wall and erecting towers to pour the concrete. New machinery for loading and unloading grain cars is being installed and practically ready for operation. The reconstructed portions of the elevator will be fitted with glass windows and an automatic electric ventilating system, which will minimize the danger of future explosions, according to John A. Peterson, general manager, and may be opened in 15 seconds by pressing a button. Within 5 days after the explosion the elevator was able to load and unload grain. Ten days after it occurred, a steamer loaded 32,000 bushels of grain and a few days later three other steamers loaded an aggregate of 100,000 bushels.

Winston-Salem Completes Schools

Winston-Salem, N. C.—Two new school buildings, the North Junior High and the South Junior High, have been completed here at a cost of approximately \$600,000. The former will accommodate 400 students and the latter 600. Northrup & O'Brien, Winston-Salem, were architects for both buildings, with the Angle-Blackford Co., Greensboro, N. C., handling general contract on the North Junior High and R. K. Stewart & Son, High Point, N. C., on the South Junior High. A new \$300,000 high school is at present under way at 12th street and Cameron avenue, for which Harold Macklin is the architect and Frank L. Blum & Co., general contractors, both of Winston-Salem.

WORK SOON ON \$3,250,000 HOSPITAL

**Arkansas Institution Designed to
Accommodate 4000 Patients**

Benton, Ark.—Architects for the new State Hospital for Nervous Diseases to be erected near Benton at a cost of \$3,250,000, have been instructed by the State Construction Commission, Little Rock, to proceed with working drawings and specifications for the farm buildings to be erected as part of the institution. These will be located about a mile from the hospital buildings proper and will include four dormitories to house 100 patients each, dining hall and kitchen, store building, recreation building, farm employees' dormitory and garage, fire station, mill building, dairy house, three dairy barns to accommodate 100 head of cattle each, dry cattle barn, calf barn, pens, mule barn, farm garage and repair shop, piggery, cattle hospital, poultry houses, abattoir and crematory, dipping vats, cottages for superintendent and herdsmen, greenhouses, central heating plant, etc. The building will be of concrete and brick and structures hous-

ing patients will be entirely fireproof, while others will be of fireproof or semi-fireproof construction. The institution is designed to accommodate 4,000 patients ultimately. Mann, Wanger & King, Little Rock, and Sullivan W. Jones, New York, are the architects. Engineering details are being handled by the Lund Engineering Co., Little Rock.

\$1,200,000 Building Program

University, Va.—Carrying out a building program announced last spring, which will involve an outlay of \$1,200,000, the University of Virginia will open bids September 23 for a \$200,000 nurses' home. The structure will be H-shaped, 4 stories, 160 by 140 feet, plans and specifications having been prepared by a board of architects of which John Kevan Peebles, Norfolk, is chairman. This is the second unit in the program, a \$300,000 stadium being well under way. Other units to be erected include a \$350,000 law building, \$150,000 addition to the heating plant, \$100,000 wing to the Cobb chemical laboratory and a \$100,000 art museum.

Do Industrial Plant Repairing Now

By W. F. SCHAPHORST, M. E., Newark, N. J.

While plant load is low, that is the time to do needed repairs. Simply because boilers or other equipment continue to function is no reason why they should not be overhauled. Uneconomical operation is a liability. Improvements in most lines of mechanical equipment are continually being made. Obsolete equipment should be removed entirely and replaced by new equipment.

I have in mind equipment which pays for itself out of savings within six months. Some classes of equipment do even better. Some classes require two years, three years and more. It is well to establish a policy of your own and decide that if new equipment will actually pay for itself out of savings within a fixed time the equipment now being used is obsolete and should be junked and replaced.

Furnaces, for example, can often be made more economical by adding a wall of insulation. Probably the boiler baffle walls leak and need replacing. Many a boiler is permitting valuable hot gases to short circuit through directly from the furnace into the stack. Your method of boiler feed regulation can probably be very much improved. I recently saw a regulator installed in a comparatively

small industrial plant which is now saving 2½ tons of coal every day. It pays for itself every week.

How about the vibration of your machinery? Elimination of vibration is now recognized as being highly important. Don't hesitate to install high grade natural cork foundation where necessary. Have the work done by experienced vibration engineers.

Circulation may be defective. Leaks should be stopped. Valves and stuffing boxes should be packed. Traps should be put in order. Control valves should be overhauled. Condensers, pumps, receivers, stokers, roofs, water spouts, skylights — all such things should be looked over carefully and put in A1 condition. By doing these important jobs now, greater efficiency and economy will result during the winter months and it is easier to do them now than later on when the equipment is needed.

Statistics tell us that workers are in greater danger in winter than in summer. Boiler explosions are more frequent in December, January and February than in other months. By adding together all the explosions during the other nine months of the year they hardly equal the winter explosions.

LETTERS FROM OUR READERS

Cotton Quantity and Quality Production

American Cotton Association and
Better Farming Campaign
Atlanta, Ga.

Editor Manufacturers Record:

In the August 28 issue of the MANUFACTURERS RECORD, an article described the Delta and Pine Land plantation at Scott, Miss., as "the world's largest cotton plantation." The area planted in cotton was stated to be 14,000 acres annually.

When in Mexicali, Mexico, three years ago, I rode over a cotton plantation of 125,000 acres under one management. The properties consisted of nearly 1,000,000 acres, and were planted largely also in wheat, oats and alfalfa. This was owned principally by the Messrs. Chandler, proprietors of the Los Angeles Times. Mr. Clark, the manager, informed me that the type of cotton planted was 1-1/16 inch staple and, when planted after alfalfa, would produce an average of a bale per acre, without commercial fertilizers. This was the largest plantation I had ever visited and the best equipped and operated.

In my field work, for teaching farmers economic production and to improve the quality and length of their staple, I established this season the largest field demonstration in cotton, 150 acres, ever operated in the South. This demonstration was on the plantation of S. B. Byrom, Byromville, Ga., and was planted with pedigreed 15/16 inch staple seed. Cultivated intensively, the yield is now estimated to be over a bale per acre, in the face of a serious dry spell of weather. The present estimated cost is six cents per pound for the lint, and will net a good profit at present low prices for the staple. A gathering of over 500 farmers at Byromville recently inspected the demonstration, which was said to be the best large field of cotton in the State this year.

The seed cotton is being stored as picked, so as to fully mature and dry out before ginning, to get the highest possible grade, and I expect the final results as to yield and costs of production to be very interesting.

HARVIE JORDAN, Managing Director.

Community Agricultural Corporations

Anniston, Ala.

Editor Manufacturers Record:

The only solution of unemployment is a back-to-the-farm movement, because agriculture is the only employment that cannot be overdone. We do not mean the growing or production of certain commodities, but refer to farming for a living, instead for the purpose of making money. In order to bring this about, it will be necessary to rehabilitate agriculture through organization of community agricultural corporations that will do such things for the farmers

as are not practical or feasible for the individual to do for himself.

Our federal, state and county governments are spending annually about \$500,000,000 to promote agriculture, which does not include the cost of the Federal Farm Board. Municipalities should cooperate with these agencies by establishment of necessary physical properties and the operation of them. These are problems for communities to solve; therefore, they should be financed by property values of the communities served.

Municipalities of the cotton belt that command a volume of 5000 or more bales should have modern facilities for processing, warehousing, etc. These include ginnery equipped thoroughly to mix, dry and force a percentage of oil from the seed into the lint before ginning. Cotton ginneries that handle 5000 or more bales annually should mill the seed. This can be done better and cheaper than being freighted to oil mills and the feed products returned for local consumption. It is conceded by most agricultural leaders that all feed products from the cottonseed should be returned to the land through livestock. Oil mills should be equipped with feed mills, feed mixing machinery, dehydration equipment, etc.

Each cotton farmer should have his modern fertilizer plant. He can secure most of his fertilizers through livestock and legumes better and cheaper than it can be manufactured in any way. The growing of livestock demands a community butter-making plant, poultry fattening and hatching facilities, livestock butchering plant, etc. Community corporations should operate trucks on established mail routes for the purpose of collecting and distributing whole milk, sweet and sour cream, chickens, eggs, feeds, ice, etc. Communities should operate production credit corporations to supply funds for labor, buying cows, sheep, hogs, chickens, feeds, seeds, etc.

The principle of community organization is 100 per cent sound and the idea of community organization has proved a complete failure. As to price fixing, no plan will be found superior to that of the individual. The principle of group price fixing is morally and legally wrong.

P. M. EICHELBERGER.

Protests Against Convict Made Imports

Smith Lumber Company, Inc.
Red Bay, Ala.

Editor Manufacturers Record:

We think you are to be commended on the editorial matter published in a recent issue with reference to the Russian-Communist question.

It is with much interest that we have read these editorials. We think every American should take this question seriously and protest the entry of this class of imports from Russia or any other country where commodities of any kind are exported, when manufactured by convict or enforced labor.

M. P. TINSLEY,
Vice-President and General Manager.

Forgetting the Past and Facing the Future

Durr Drug Company,
Wholesale Druggists and Manufacturing Chemists
Montgomery, Ala.

Editor Manufacturers Record:

"Vacation Days Are Over—Let's Get to Work" on the cover page of your September 4 issue is a good message, timely and full of sound optimism.

The following is a copy of a letter sent to our trade on September 1. This letter tells just how we feel about it:

"To our customers: Forgetting the Past and Facing the Future.

"Let September 1 sound the death knell of morbid mentality and mark the beginning of a new and better day.

"The high-powered and high-flying gas bag that took stocks, bonds and securities for a hilarious ride in 1928-29 began its descent about September 1 last year, just 12 months ago. This inflated thin-skinned gas bag, packed with steam pressure salesmanship, individual extravagance and foolish installment buying of luxuries, exploded in midair, bringing down prices like a shower of meteors and completely paralyzing the business nerve. This was in the latter part of October and November. Since that time we have been floundering around, not knowing what to expect, nor in what direction to move.

"We should now profit by the experience of the past 12 months and shake off the disease which has afflicted us. So let's quit wailing and weeping, and cut out the chorus of lamentations which has rent the air during this depressed period. Let's stand erect and no longer wear holes in the seat of our breeches while we make the atmosphere blue for every soul that comes about us. On the other hand, let's bestir ourselves with renewed pep, effort and energy and dissipate gloom and grouching by spreading new life and new hope. Let's part our hair in the middle, take a bath, shave and shine our shoes, sell our merchandise and collect our accounts.

"Neither insane optimism nor dismal pessimism are justified—backbone, determination and a buoyant spirit are demanded.

"The business pulse clearly indicates a more normal beat and must grow stronger under the stimulating influence of crop movements putting more money into circulation. Let's no longer wait for the return of a better condition. Let's by our own vigorous efforts bring about a better condition. Let's buy with frequency in assortments, extend credit with care, and push hard our collections.

"Above all else, let's refuse to listen to or tell hard luck stories any longer and forever quit talking hard times. The psychological reaction will startle you."

DURR DRUG COMPANY,
F. G. SALTER,
Secretary and Treasurer.

IRON, STEEL AND METAL MARKET

No Material Increase in Demand for Steel

Pittsburgh, September 15—[Special.]—Predictions of a seasonal increase in steel demand have not been withdrawn but they have not been substantiated to date by any material increase in buying and the time for verification has grown very short.

Production of Bessemer and open-hearth steel ingots in August is officially reported at 3,095,293 tons, against 2,933,399 tons, which would represent 5.5 per cent increase. By rule, Independence Day and Sundays are counted out and thus there is the appearance that the daily rate increased 5.5 per cent. On account of various considerations, however, it may be taken that from Monday, July 7, to the present date the rate of steel production has not materially changed, the rate being between 36,000,000 and 37,000,000 tons per annum. That is just the rate of 1924, which was by no means a badly off year. Measured in tonnage, this year has not been doing so badly, particularly in its early months, but from January 1, 1924, to the present time steel making capacity has increased approximately 25 per cent, chiefly from rivalry between steel companies and from improvements intended to reduce cost of production, as such improvements invariably involve an increase in capacity. Thus the steel industry has a relatively low operating rate, say 55 to 60 per cent of present capacity. The new construction of the last few years occurred on top of the capacity left at the close of the war, thought at the time to be excessive.

The Steel Corporation's statement of unfilled obligations at the close of August made a very unfavorable showing. In each month of the second quarter there was a decrease in unfilled obligations, June showing the smallest decrease of the three, the quarter's decrease being about 500,000 tons. Then July showed an increase of 53,991 tons, suggesting that the shaking out process had been completed, but August now shows a further decrease of 441,851 tons, the largest August decrease since 1923, and that decrease was followed by declining steel production to the end of the year. Shipments of steel in both July and August may be estimated at about 63 per cent of capacity, or at around 930,000 tons for each month. Bookings, computed from shipments and the increase or decrease in unfilled obligations, decreased just about one-half from July to August.

So far as the Steel Corporation's report goes, it is no augury for fulfillment

of predictions of an increase in steel production, but quite the reverse. It should be noted in particular that there could be quite an increase in the corporation's bookings, over the low August rate, without that necessitating or permitting any increase in the rate of shipment.

The question continues to be asked, from what quarters can come an increase in steel demand, and even the sellers who have been predicting an increase admit their inability to give a detailed or specific answer, there being reference simply to increase in trade generally. Scrutiny of individual consuming lines does not bring out much if any prospect of increased steel tonnage. Automobile production made a moderately fair showing in the first six months of this year, but July production was about 25 per cent under what would be expected from first half production, allowing for usual seasonal variation, and then August was 35 per cent under, decreasing 12 per cent from July when usually there is a slight increase July to August. Prospects are for a further decrease this month, which would be in accordance with usual seasonal swing, regularly downward during the last four months of the year. Freight car orders have been inconsequential for three months and there are no prospects. Fabricated structural steel has been doing so well right along this year that it cannot be expected to increase. Line pipe production has been at capacity for three or four months and is likely to taper off for the winter. The farm implement industry should have some increase for the remainder of the year.

Steel prices remain quite irregular despite efforts to stiffen various lines.

Copper Export Sales Are Fair— Zinc Surplus Stocks at Top Figure

New York, September 15—[Special.]—Steadiness of price continues the chief feature of the non-ferrous metal markets. Most of the major metals are comfortably above the low points of the year, copper being a notable exception. Yet prices of several commodities have been seeking new bottom levels, such as rubber and sugar, both of which are lowest in price in history. Metal producers therefore derive some consolation from the fact that prices might be worse.

There seems to be a feeling in industry in general that the corner has been

turned and that business is facing ahead. That, for instance, has been said of the steel industry. Improvement in steel is perhaps seen more clearly than among the non-ferrous metals, but the latter usually follow the ferrous metal. Steel operations continue to improve and there is an attempt to secure higher prices.

In copper the export sales have been quite fair, averaging 1200 tons daily. Domestic copper consumers are believed to be awaiting August statistics, though some producers report the best home business since early August.

Among the minor metals silver has been somewhat stronger, selling at over 36c per ounce most of the time. Platinum prices on the other hand have taken a drop of \$3 per ounce, selling around \$30. One platinum authority has suggested that platinum be used for coinage purposes in view of the large surplus stocks and the durability of the metal. Quicksilver prices are unchanged at \$117 to \$118 per flask, the lower price applying to large lots only.

It looks as though the automobile makers would do well to equal their August production this month. Radio manufacturers are speeding production and herein lies a good demand for the metals as well as steel. But little news has been heard of late concerning conditions among the manufacturers of electrical equipment, but according to the last that was reported, they are the busiest among the copper consumers, as judged by the large shipments of refined copper in the form of wire bars. Makers of lead-covered cables are busy as judged by big purchases of both copper and lead.

One wit of the metal trades has stated recently that the only way to make money out of copper these days is by a patent of the Chase Brass & Copper Co. By this process money bills are coated with a fine film of copper, making the bills tear-proof and weather-proof. Present prices of copper are very close to the cost of production for the majority of producers. A few American producers can turn out the red metal at 6 to 8 cents per pound, but for the majority these costs are over 10 cents per pound.

Most copper producers claim that domestic sales have been light. However an observer who has access to the books of producers, finds total sales of 11,000 tons for a week, the best since early August. Export sales have averaged 1200 tons daily, a fair figure. Better sales, however, were not sufficient to absorb the cheaper offerings of copper which are still made at 10½c per pound

as against the official quotation of 11 cents. The export figure is the same at 11.30c c. i. f. European ports.

European consumers complain bitterly because American users can buy the metal $\frac{1}{4}$ c per pound under the foreign price, a condition which has obtained since the middle of August. American producers reply that the official home price is 11 cents and that sales under this figure by custom smelters are not regular ones.

Surplus stocks of slab zinc reached another high total for all time at the end of August when 122,635 tons were reported by the American Zinc Institute, a gain of 5254 tons during the month. The zinc market has labored hard under the influence of these statistics. Early in the week some producers were attempting to obtain 4.35c per pound. East St. Louis, for prime western slab zinc, but by the end of the week the metal was obtainable at 4.25c. The price of zinc ore is unchanged at \$31 per ton, which is a fair price by comparison with the figure in the late spring. It is announced that six additional idle mines in the tri-State district have resumed work.

Lead consumers are ordering in minimum carloads of 33 tons whereas previously lots of 100 tons were the standard order. Consumers are apparently using as much lead as usual but are buying more frequently. Lead buyers are evidently in doubt concerning the trend of the market.

The tin market continues in a rut, with price levels the same as for the past many weeks at a trifle under 30 cents per pound. Consumers purchase only small tonnages. The chief consolation is that whereas the world's visible supply is the largest in history, invisible supplies are doubtless very small.

Pig Iron Specifications Call for Prompt Delivery

Birmingham, Ala., September 15—[Special.]—While a little better delivery of pig iron is under way, curtailment of production by banking blast furnaces has stopped additions to the surplus stock of iron on furnace yards. Books for delivery during the fourth quarter will be opened in the next few days. In the meantime, the probable make in September is being sold; in practically every instance specification follows for immediate delivery.

The base price continues very firm, \$14. No. 2 foundry. Survey does not bring out any renewed activity among the melters of iron. Stove foundries are producing right along but there is apprehension that demand is not going to be as good as anticipated. However,

in this direction the introduction of natural gas into a large section of the Southern territory will sponsor a movement toward gas stoves, and manufacturing shops have been giving this class of stoves attention. In the cast iron pressure pipe business, the steady iron melters, an impetus was anticipated before the close of the summer but lettings have been coming in slowly and in tonnages which will not warrant increased activity at the shops. In general foundries and machine shops there is new work being reported weekly but purchases of iron are still in the small-lot manner.

A few orders have been received recently from the East, along the Atlantic coast, and also from the mid-West, Chicago and St. Louis territories, but aggregate tonnage is very light. Protest has been made against continuation of the low freight rates, rail and steamship lines, from the Southern territory to the Eastern territory along the Atlantic coast from Philadelphia to Boston. Southern iron manufacturers have enjoyed the low rate since September 1, 1929, and a continuation to September 30, 1930, granted and another 12 months have been added to the period of reduced rates. It is hardly believed there will be any interference with the low rate.

In steel the reports indicate slight improvement. Gulf States Steel Company is placing its universal plate and sheet from its new mills, but operations are not at capacity. Much work is yet to be done toward completion of the major development program by this company for 1930, several hundred men still being employed in construction. Tennessee Coal, Iron & Railroad Company is also finding a little improvement in plate and sheet. Distribution of money in agricultural sections through gathering of cotton promises to give a little improvement in trade in steel,

with fencing, wire and nails to feel some of the effect. Estimate is made that on the whole steel operations, ingot production and finishing mills operation is around 55 to 58 per cent capacity. There has been reduction in needs for steel for railroad car manufacture, the Pullman Car & Manufacturing Corporation being at the end of its contracts. Several smaller industries are operating to capacity, requiring steel in various quantities, ranging up to 1000 tons a month.

The coal mining industry has not yet felt much effect of the approaching fall and winter. Coke remains unchanged.

QUOTATIONS ON PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL.

Old steel axles	\$18.00 to \$19.00
Old iron axles	17.00 to 18.00
Old steel rails	11.00 to 12.00
Heavy melting steel.....	10.50 to 12.00
No. 1 cast.....	11.00 to 12.00
Stove plate	9.50 to 10.00
No. 1 railroad wrought....	9.50 to 10.00
Old car wheels	10.00 to 11.00
Old tramcar wheels	11.00 to 11.50
Machine shop turnings.....	7.50 to 8.50
Cast-iron borings	7.50 to 8.50
Cast-iron borings (chem.)..	12.00 to 13.00
Re-rolling rails	12.50 to 13.00

Steel Ingot Tonnage Increases

Increase in operation percentage of open-hearth and Bessemer steel ingot plants, from 56.35 in July to 59.46 in August, is reported by the American Iron and Steel Institute. The August production of open-hearth ingots totalled 2,543,466 tons, an increase of 132,000 over July, while Bessemer in August reached 374,467 tons, an increase of 20,700. The monthly output of both by all reporting companies was 2,917,933 tons for August, as compared with 2,765,315 for July, with 26 working days in each month. The total for the first eight months of this year was 28,113,096 tons, for companies representing 94.27 per cent of the total production.

Sand-Lime Brick Census

According to a preliminary tabulation of data collected in the Census of Manufactures taken in 1930, total production of sand-lime brick in the United States in 1929 amounted to 277,397,000, valued

at \$3,006,246. Statistics for 1929 as summarized in the following table, with comparative figures for 1927, were compiled from data collected at the Biennial Census of Manufactures.

	1929	1927
Number of establishments.....	42	45
Wage earners (average).....	617	790
Wages	\$818,525	\$1,051,495
Cost of materials, fuel and purchased electric current.....	\$980,281	\$1,157,965
Products, total value.....	\$3,104,332	\$3,616,456
Sand-lime brick:		
Thousands	277,397	311,336
Value	\$3,006,246	\$3,542,906
Other products, value.....	\$98,086	\$73,550
Value added by manufacture:		
Total	\$2,124,051	\$2,458,491
Per wage earner.....	\$3,443	\$3,112
Ratio (per cent) of cost of materials, etc., to value of products	31.6	32.0
Stocks of sand-lime brick on hand December 31, thousands	23,452	24,592

HIGHWAYS AND MOTOR TRANSPORT

MAY BUILD SIDEWALKS ALONG STATE ROADS

Facilities for Pedestrians Along Heavily
Traveled Routes Seen as
Urgent Need

By E. E. DUFFY.

Act No. 74, New Jersey Laws of 1930, is its commonplace name, but it carries with it something of significance to every person in this country who walks.

The gist of the law is that New Jersey's state highway commission may build sidewalks along state highways. This is the first noteworthy recognition given in recent years to that part of society known as the pedestrian, that person who is continually being killed and maimed along public thoroughfares.

Two other states, Delaware and West Virginia, have made such provisions, according to a recently conducted survey to which 36 states replied. Only about a third of the states have provisions for permitting towns and counties to build country walkways even at their own expense.

It is quite apparent that on the whole there is a tendency to overlook that people are still required to walk along the public highway. But considerable walking is still being done; Delaware reports that in the period from 1924 to 1929, 83 pedestrian accidents occurred in the state. This is 36 per cent of accidents of all types in Delaware outside of Wilmington.

A glance at highways leading into towns and cities, or highways passing rural schools, will reveal that walking is not a lost art. In fact it is very much of an art for where no walking provisions have been made pedestrians are forced to walk along the pavement's edge, or on the abutting shoulder, with the expectations of jumping into ditches and brambles most any moment.

Edward N. Hines, well known road leader of the Detroit area, recently declared, "I am a firm believer that pedestrian walks along heavily traveled roads are absolutely necessary, and while the time may not be ripe for carrying this out on a major scale, the time is surely coming when all such roads will be supplemented by walkways."

New Jersey has given impetus to a movement, which in view of pedestrian accident figures, should rouse latent sympathy throughout the country for pedestrians—a group of which we are all members.

\$900,000 Road Bonds Offered

Fort Worth, Tex.—Proposals for the purchase of \$900,000 Tarrant County road bonds, to bear an interest rate of 4½ per cent, will be opened September 22 by W. E. Yancy, county auditor.

\$5,000,000 Road Bonds Sold

Jefferson City, Mo.—Road bonds in the amount of \$5,000,000, bearing a 5 per cent interest rate, have been sold by the State Board of Fund Commissioners to a syndicate headed by the National City Bank of New York, at \$5,020,995. This is the third block of a \$75,000,000 road bond issue to be sold, the first block of \$7,500,000 having been sold about a year and the second block of \$10,000,000 in April, 1930. In addition to the National City Bank of New York, the purchasing syndicate is composed of the First National Company of St.

Louis; Schaumberg, Rebham & Osborn, Wallace, Sanderson & Co., E. H. Childs & Co., Bankers Trust Company and Chatham Phenix Corp., all of New York; Guardian Corporation of Detroit, and E. H. Rollins & Son, Chicago.

\$2,160,000 for Kentucky Roads

Frankfort, Ky.—Contracts for road and bridge construction, to involve approximately 200 miles of highway and four bridges, have been awarded by the State Highway Commission, at approximately \$2,160,000. The road work is located in Adair, Allen, Bath-Montgomery, Calloway, Crittenden, Fleming, Garrard, Grayson, Henderson, Jackson-Clay, Jessamine, Johnson-Floyd, Lincoln, Marshall, Martin, Muhlenberg, Ohio, Perry-Knott, Perry-Leslie, Powell and Union counties. The proposed bridges will be built in Gallatin, Lewis, Morgan, and Perry counties.

Insulated Tank to Transport Milk from County Depots to City Dairy Plants

The Columbian Steel Tank Co., Kansas City, Mo., recently added a new department for the building of thermos-type tanks for hauling milk from country milk depots to city dairy centers. The company has been engaged for years in building truck tanks for the oil industry; it entered upon the new field at the suggestion of engineers representing a New York milk company. The first tank was delivered in August. It is of 2250 gallons capacity, and is said to be the first cutaway semi-trailer ever built for hauling milk, as well as the

first insulated milk tank with inner and outer shells permanently united in one monometallic unit.

The inner shell is of Allegheny metal, highly polished on the inside and is without partitions or other interior construction. Around this inner shell is a series of form rings to which the outer shell is welded. Between them is an insulation of cork, asphaltum and asbestos. The tank is designed so that the contents will lose no more than two degrees of coldness in an eight-hour run with an outside temperature of 100 degrees, say the producers.



Cutaway Frameless Semi-Trailer Truck Tank

NEW AND IMPROVED EQUIPMENT

Bowl Type Deep Well Pump for Heavy Duty

Designed for deep lifts and for heavy duty above the surface, a new bowl type deep well pump has been introduced by the Luitwieler Pumping Engine Co., Rochester, N. Y. It is connected to a bowl type turbine and is equipped with the company's laminated, long, special treated leather bearings, which require no lubrication and are effective in stabilizing the shaft, insuring continuous service without attention and water free from contamination. The pump may also be furnished direct connected to a vertical steam turbine where surplus or process steam is available, and it is adaptable for direct connection to a gasoline, kerosene or Diesel engine or with belted head for remote drive. Unless otherwise specified, full size standard pipe is used for the column with specially designed couplings.

Welding Hydrogen From Ammonia

The General Electric Company, Schenectady, N. Y., announces equipment for the dissociation of anhydrous ammonia into its component parts of 25 per cent nitrogen and 75 per cent hydrogen, to such a degree as to make it suitable for use with atomic hydrogen welding equipment. It consists of an electrically and thermally insulated alloy tube filled with an ammonia cracking catalyst and connected to a low voltage, high-current transformer. Suitable temperature control and indicating devices, regulator, safety devices and heat interchanger are provided.

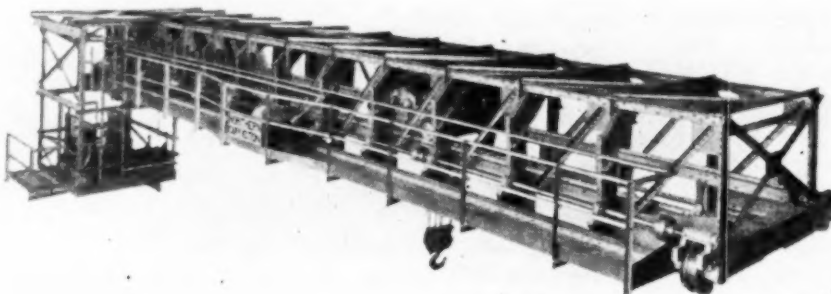
Wire Cloth for Radio Grid Screens

The Newark Wire Cloth Co., Newark, N. J., manufacturers of wire cloth of all meshes, weaves and metals for industrial purposes, announce an improvement in wire cloth for radio grid screens. In this material, "Sealedged," as it is designated, all wire ends are individually bent over, leaving the plates with a smooth and even finish. Its use in tubes "prevents wires dropping from the cloth and overcomes a great many rejects of the finished tube, due to short circuits." Uniformity of the cloth is described as one of the advantages to screen plate manufacturers. It can be obtained in any width desired.

Traveling Cranes of Aluminum

Six overhead traveling cranes have been built recently by the Northern Engineering Works of Detroit, Mich., for the United States Aluminum Company, Pittsburgh, for use in its sheet rolling mills at Alcoa, Tenn. The cranes are interesting from several standpoints; design and construction of the bridge is unusual and the crane, including trolley, is made almost entirely from aluminum alloy rolled structural sections and aluminum alloy castings. One crane with a capacity of 10 tons has a bridge span 76 feet 6 inches between truck wheels; the height of the lift on the hoisting hook is 25 feet. Mill type motors, for 220 volts direct current, drive respectively the hoist, bridge travel and trolley travel. They have full magnetic control, placed in the operators' cab at one end of the bridge. The hoist operates at a full load speed of 50 feet per

minute and is provided with a 19-horsepower motor, while the loaded bridge travels at a speed of 400 feet per minute and is provided also with a 19-horsepower motor. The trolley travels at a speed of 150 feet per minute, driven by a 4¼-horsepower motor. The crane bridge is of latticed type girder construction, said to be the first of this type designed and built for crane purposes, and made entirely from aluminum alloy rolled sections. All rivets used in the structure are aluminum, as is the T rail on which the crane trolley runs, including hook bolts and nuts that secure it to the girders. Trucks which carry the bridge are aluminum castings made from No. 195 alloy; and all gear housings, gear covers, bearing houses, line shaft bearings and other parts are of aluminum alloy. Total net weight of the entire crane including trolley is 30,000 pounds, whereas it is said it would have weighed 77,100 pounds made of steel.



Overhead Aluminum Crane Built by Northern Engineering Works

Suggestions for Stabilizing Employment

Suggestions for the stabilization of employment, covering periods when business is increasing and when work begins to fall off, were advanced by S. L. Whitestone, comptroller of the General Electric Company, in a recent address in New York.

In times of business increase, Mr. Whitestone said that managers should increase the working force slowly, and transfer to especially busy departments employees from less busy departments. Also, he would resort to overtime, before increasing working forces, and would postpone plant renewal and maintenance work in favor of regular production.

Among 11 suggestions for times when work begins to fall off, he named: Cease hiring at once and cut out all possible

overtime; bring all stocks up to maximum; use men on maintenance and repair work; cut normal week gradually by departments to 50 per cent of normal; proceed with construction of increased plant facilities previously planned, using own men as far as possible. In dropping employees, he first would select those of short service and single persons with no dependents.

Mr. Whitestone also outlined a plan for employment insurance.

Plans \$500,000 Medical Building

Beaumont, Tex.—Plans are being considered by W. Carrol Keith, local capitalist, for a \$500,000 medical arts building at Sabine Pass avenue and Emmett street. The structure would accommodate at least 75 doctors and dentists.

CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ark., Little Rock—City, Mayor Robinson, reported, plans acquiring 210 acres adjacent to present flying field will improve for airport; about \$200,000, available.

D. C., Washington—Dept. of Commerce, Aeronautics Branch, Washington, D. C., reported, let contract conditionally to Crouse-Hinds Co., Syracuse, N. Y., for 150 of 36-in. airway revolving beacon lights, cost \$94,050; lights to be installed on proposed southern transcontinental airway from San Diego, Calif., to Fort Worth, Tex.

Fla., Miami—City of Miami acquired 157 acres at Opalocka for air field for Naval Air Reserve Unit; will construct metal hangar with lean-to with 40x100 ft. aprons on each side of building; all material purchased; steel to be erected by Virginia Bridge & Iron Co., Roanoke; metal covering by H. H. Robertson Co.; all other work to be done by city forces without contract; cost of building \$26,439; Ernest Cotton, Director Public Service.

Fla., West Palm Beach—City Aviation Comsn. approved offer of Roosevelt Flying Corp. for airport on Belvedere Rd.; city to construct hangars, etc.

Ky., Louisville—Wm. S. Kenyon, Airways Extension Supt., Aeronautical Division of Dept. of Commerce, Washington, reported, making survey of air field facilities for proposed route between Louisville and Dallas, Tex., via Nashville, Memphis, Little Rock, Texarkana, Fort Worth and Dallas.

La., Monroe—Ouachita Parish Police Jury receives bids Sept. 17 for constructing hangar building at Selman Field; steel; 110x130 ft.; Sam Collins, Engr. 4-11

Mo., St. Joseph—Pacific-Atlantic Aero Corp. incorporated; D. M. Martin, Oregon, Mo.

N. C., Elizabeth City—D. D. Sanders, Jr., Sec., Chamber of Commerce, leased 32 acres for development of municipal airport.

Tenn., Collierville—Manneraft Airplane Corp., has plans in progress for airplane hangar, 1 story; 60x120 ft.; cost \$10,000. 8-21

Tenn., Memphis—V. F. Poussard, Dept. of Commerce, Airways-Radio Div., soon call for bids for \$40,000 station.

Tex., Dallas—Southern Air Transport, Inc., Love Field, reported, plans \$100,000 hangar unit with repair and reconditioning facilities.

Va., Hampton Roads, Norfolk—E. P. Lindsay, 1331 High St., Portsmouth, has contract at \$38,832 for improvements to flying field, for Bureau of Yards & Docks, Navy Dept., Washington.

Bridges, Culverts and Viaducts

Proposed Construction

Alabama—State Highway Comsn. receives bids on 5 bridge projects. — See Roads, Streets, Paving.

Alabama—State Highway Comsn. has low bids for 2 bridge projects. See Roads, Streets, Paving.

Kentucky—State Highway Comsn., H. D. Palmore, Engr., Frankfort, opens bids Sept. 23 for 0.650 mi. fill approaches to Nolin River bridge, Red Mills; 44,912 cu. yd. excavation, 6870 tons limestone, 1484 tons river gravel.

Kentucky—State Highway Dept. has low bids for 8 bridge projects. See Roads, Streets, Paving.

Kentucky—State Highway Comsn., H. D. Palmore, Engr., Frankfort, has low bids for 2 bridges: Over Green River, Spottsville—substructure, Koss Construction Co., Des Moines, Ia., \$67,979; superstructure, International Steel & Iron Co., Evansville, Ind., \$118,927; Over Cumberland River, Burnside—substructure, E. R. Mills, Kanawha Ave., Charleston, W. Va., \$70,398; superstructure, E. R. Mills, \$120,298.

La., Turnbull—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, Tex., will require 400 tons struc. steel for bridge.

Maryland—See Roads, Streets, Paving.

Miss., Magnolia—Pike County Bd. of Supvrs., Chas. E. Brumfield, Clk., opens bids Oct. 6 for 3 small bridges on Summit-Liberty road, Fourth Dist., and for 4 small bridges on new road near Beartown, Second Dist.

Miss., Oxford—Lafayette County Supvrs. open bids Oct. 7 for 3 foot bridges: 200-ft. bridge over Oliver levee, Beat 5, 13.

Miss., Jones Creek, Taylor and Water Valley Road, Beat 4; 120-ft. bridge, Upper Cypress Creek levee, over Ward Creek, Beat 2.

Miss., Pontotoc—Pontotoc County Supvrs., G. A. Young, Clk., opens bids Oct. 7 for 2 bridges: Over Duncan Creek and bridge over Buttermilk Branch, both on Thaxton and Hale's Gin road.

Miss., West Point—Clay County Bd. of Supvrs., Julia H. Johnson, Clk., opens bids Oct. 6 for 2 conc. abutments across Little Cane Creek, west of Montpelier.

Missouri—State Highway Comsn. receives bids for 34 bridges. See Roads, Streets, Paving.

North Carolina—See Roads, Streets, Paving.

Okla., Oklahoma City—See Roads, Streets, Paving.

Tenn., Dayton—State Dept. of Highways and Public Works, Jno. L. Neely, Jr., Office Engr., Nashville, advises regarding bridge over Tennessee River between Rhea and Meigs Counties, will be included in first letting after plans have been completed, which will probably be in December. 9-11

Va., Petersburg—Cornell-Young Co., Gen. Contr., Georgia Casualty Bldg., Macon, Ga., advises that company, which has contract for masonry substructure, let sub-contract to Gresham & Ware, Inc., 128 N. Market St., Petersburg, for excavation for South St. underpass of Seaboard Air Line Ry. Co., W. D. Faucette, Ch. Engr., Savannah, Ga.; recently noted railway let this contract. 9-11

Contracts Awarded

Ark., North Little Rock, Little Rock—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, advises plans building Third St. underpass entirely with railroad forces. 7-14

Fla., Pensacola—Nashville Bridge Co., of Shelby Ave., Nashville, Tenn., has contract for draw span of Pensacola Bay Bridge; Northwest Florida Corp., Panama City, Gen. Contr. 11-14-29

Kentucky—State Highway Comsn., H. D. Palmore, Engr., Frankfort, let contracts for toll bridge over Ohio River, Ashland; Substructure, Yang Construction Co., Grant Bldg., Pittsburgh, Pa., \$141,280; superstruc-

ture, Mt. Vernon Bridge Co., Mt. Vernon, Ohio, \$439,870. 8-7

La., Natchitoches—Natchitoches Parish Police Jury, F. G. Kelley, Pres., let contract to E. B. Welch for bridge over Little River near Cloutierville. 8-

Miss., Grenada—Grenada County Supvrs., Mrs. Jessie Thomason, Chancery Clk., let contract to Robinson & Co., Muscatine, Ia., at \$23,987 for 57 or more bridges in various districts; W. E. Johnson, County Engr. 8-28

Miss., Tunica—Tunica County Bd. of Supvrs., L. C. Shannon, Clk., build bridge over Beaver Dam Bayou with convict force. 9-11

Okla., Arapaho—Custer County, Jesse Hattchett, Clk., let contract to Grant Williams, Oklahoma City, at \$36,693, for bridge; 70-ft. truss with 2 25-ft. I-beam approach spans and 4 40-ft. I-beam spans. (See Roads, Streets, Paving, 8-14.)

Tennessee—Virginia Bridge & Iron Co., Roanoke, Va., has contract for 500 tons steel for bridge in Roane County, of State Dept. of Highways and Public Works, T. E. McEwen, Engr., Nashville.

Tenn., Knoxville—City, George R. Dempster, Mgr., let contract to Booth & Flinn, 1924 Forbes St., Pittsburgh, Pa., at \$911,592 to \$948,742, for Henley St. Bridge; Leonard W. Dow, Struc. Engr., Brownlow Bldg.; W. W. Mynatt, Dir. of Public Service. 9-4

Canning and Packing Plants

Florida—Libby, McNeill & Libby, Chicago, Ill., advise are not planning to erect canning plant in Florida this year. 9-11

Fla., Eustis—S. E. Rice, Apalachicola, reported, let contract to Zeb Osborne, for 2 story building, 60x125 ft.

Fla., Jacksonville—Florida Fruit Packing Corp. incorporated; C. H. Murchison, Barnett Bldg.; leased Roberts Bldg., Riverside Annex, for packing plant, capacity 150,000 cases annually.

Fla., Jacksonville—Charles E. Muller, Mgr., Chamber of Commerce, reported, negotiating with outside capitalists for citrus canning plant.

Fla., Plant City—G. A. Carey, Inc., constructing canning plant, daily output 12 to 18 cars; 150x160 ft., wood and steel, compo. roof; cost \$20,000; G. E. Wilson Co., Contr.; install one unit of citrus packing machinery; Florida Citrus Machinery Co., Dunedin, Machy. Contrs.

Tex., Yoakum—J. J. Luskin, San Antonio, negotiating with Chamber of Commerce for establishment of canning plant. 9-11

Va., Hopewell—Southside Marketing and Finance Corp., Box 754, plans erection 5 canning plants in counties adjacent to Hopewell. See Want Section—Machinery and Supplies.

Coal Mines and Coke Ovens

Ky., Louisville—Black Creek Coal & Mining Co., Brook and Eastern Parkway, increased capital stock to \$20,000.

Va., St. Charles—Fairmont Mining Machinery Co., 10th St. and Belt Line, Fairmont, W. Va., reported, closed \$140,000 contract with Blackwood Coal & Coke Co., for conveyor system.

West Virginia—George and Alex Waddell, Philippi, reported, acquired real estate of Delmar Coal Co. and equipment exclusive of

Taylor County mining rights; mining rights in Taylor County acquired by Pittsvelt Coal Co., New York City, Geo. S. Couch, Jr., New Kanawha Valley Bank Bldg., Charleston, acting for the company; Glenn Hunter, acting for Union Bank & Trust Co., Morgantown, acquired Ruth Mining properties in Monongalia County.

W. Va., Emmett—King By-Products Coal Co., capital \$25,000, incorporated; H. B. Summers, R. C. Behymer.

W. Va., Erbacon—Byrd Coal Co., J. A. Springer, Pres., Grafton, purchased holdings and railroad of the William Waggy Coal Co.

Cotton Compresses and Gins

Mo., Parma—Parma Gin Co., capital \$20,000, incorporated; R. C. Allen, John Leigh.

N. C., Enfield—Holliday-White Gin Co., capital \$30,000, chartered; W. G. Holliday, J. W. Whitaker.

Okla., Sayre—Ed Matthewson Gin Co., capital \$30,000, chartered; E. G. Matthewson, Sayre; Edwin T. Griffin, Shamrock, Texas.

Okla., Texola—Darnell Gin Co., capital \$30,000, chartered; Jabe Darnell, Texola; E. R. Tinsley, Shamrock, Texas.

Tex., Clinton—J. B. Dannenbaum, reported, has contract at \$29,990 for 1 story, 147x440 ft. frame cotton shed.

Tex., Houston—J. B. Townsend, Post-Dispatch Bldg., has contract for warehouse North Side plant on Quitman St., for Houston Compress Co., Cotton Exch. Bldg.; 106x315 ft., 1 story; cost \$42,000.

Tex., Shamrock—Wiles Gin Co., incorporated; W. D. Wise, E. R. Tinsley.

Tex., West—Walla Gin Co., capital \$40,000, incorporated; J. Maresh, Joe Walla.

Drainage, Dredging and Irrigation

Ala., Birmingham—City Comsn. has low bid from Ward-Hays Construction Co., Cleveland, Ohio, at \$165,163, for straightening, widening and deepening Village Creek, Ave. F to Ave. W. Ensley; from Ward-Hays Construction Co., at \$50,387, for Valley Creek. 8-21

Electric Light and Power

Electric light and power work in connection with many **LAND DEVELOPMENT** operations involves the expenditure of large sums of money. See that classification for details.

Arkansas—Electric Power & Light Corp., 2 Rector St., New York, C. E. Groesbeck, Pres., offering \$15,000,000 gold debentures, 5% series, through Bonbright & Co., 201 Keyser Bldg., New York; company controls a diversified group of companies supplying electric power and light service in 10 states, including Arkansas, Louisiana, Mississippi, Texas, Colorado, Utah, Idaho, Wyoming, Nevada and Oregon; natural gas in Texas, Louisiana, Arkansas and Mississippi.

Ark., Little Rock—Arkansas Power and Light Co., H. C. Couch, Pres., Pine Bluff, reported, to begin work in the fall on clearing right of way for additional 110,000 volt line from Carpenter hydro electric station to Woodward dispatching and transformer station at Pine Bluff; C. S. Lynch, Ch. Engr. of company, will supervise work. 11-28

Ark., Montrose—Arkansas Power & Light Co., Simmons Natl. Bldg., Pine Bluff, reported, constructing 110,000 volt steel structure substation; cost \$25,000.

Kentucky—Kentucky Utilities Co., Inc., Louisville, will offer through Halsey, Stuart & Co., Inc., \$2,500,000 first mortgage 5% bonds, series 1. 7-10

Miss., Biloxi—City, reported, considering granting power, light and transportation franchise to Mississippi Power & Light Co., Jackson.

Miss., Jackson—Mississippi Public Service Co., incorporated; Alexander Daas, 15 E. 31st St., New York City.

Miss., Woodville—Town, Mary B. Scott, Clk., receives bids Oct. 7 for voltage regulator, 180 kv-a alternator, 2300 volts with exciter 15 kw., 125 volts, 257 R.P.M.; information from city clerk.

Mo., St. Louis—Union Electric Light & Power Co., Twelfth & Locust Sts., reported, applied to Public Service Comsn., Jefferson City, for permission to issue and sell to North American Edison Co., 60 Broadway, New York, 360,000 shares of common no par stock; proceeds to be used for acquisition of property and for extension of facilities.

North Carolina—Towns of Spindale, Ruthersfordton and Forest City will vote soon on sale of electric and water plants to Southern Public Utilities Co., Charlotte. 7-10

N. C., Albemarle—Southern Public Utilities Co., Charlotte, reported, acquired Oakboro Power and Light Co.

N. C., Morehead City—City, K. P. B. Bonner, Mayor, receives bids Nov. 4 for sale of municipal electric and water systems; information from Utilities Engineering & Management Co., 917 Johnston Bldg., Charlotte, N. C.

N. C., Wilson—Beaman & Coleman Constr. Co., Lawyers Bldg., Raleigh, reported, has contract for addition to power plant; McClelland Co., Latta Arcade, Charlotte, for piping. 8-21

Tenn., Memphis—Memphis Power & Light Co. advises that purchase of acreage on southern edge of Shelby County is for future steam electric generating station, but plans have not materialized beyond purchasing the site. 9-11

Texas—West Texas Utilities Co., Abilene, adding new steel bay to substation Shamrock and an 11 kv. automatic reclosing oil switch, 11 kv. oil circuit breaker control and metering panel and 450 kv-a. 6000 to 2300 volt transformer bank installed; ten mile 11,500 volt extension of Shamrock-Lela line, west from Lela to Wheeler County line now under construction also 2300 volt 3 phase line at Brady; distribution systems will be improved and extended in Clarendon, Hamlin, Menard, Hartley and Dumas; at Quitaque business section distribution system will be rebuilt, and extension made to serve 2 cotton gins, Stratford building plans include 24x60 ft. office and warehouse.

Flour, Feed and Meal Mills

Mo., Kansas City—National Foods Corp., Guy A. Thomas, Chmn. of Bd., reported, acquired control of Commander-Larabee Corp., Chamber of Commerce Bldg., Minneapolis, Minn., operating flour mills in Kansas City, Hutchinson, Wellington, Topeka, St. Joseph and Clinton; offices in Dwight Bldg.

Foundry and Machine Plants

D. C., Washington—Bureau of Yards and Docks, Navy Dept., receives bids Oct. 1 for improvements to brass foundry at navy yard; work includes conc. piling, struc. steel work, steel windows and doors, present steel roof deck, built-up roofing, sheet metal work, ventilating fan and stucco work.

Tex., Dallas—R. E. Davis, 2823 Williams St., erect 1 story, brick machine shop, cost \$12,000.

Garages and Filling Stations

Ga., Atlanta—Fred Watts plans filling station, dance hall, fire range and miniature golf course, Techwood Drive and North Ave.; brick and frame; day labor.

D. C., Washington—Bailey Construction Co., reported, construct brick, tile and conc. gas station at 4532 Wisconsin Ave.; cost \$16,500.

Fla., Gainesville—Haynie Tire Service Inc., capital \$25,000, incorporated; E. A. Haynie, M. M. Parrish.

Fla., Miami—Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa., let contract to Halsema Bros., 1452 N. Miami Ave., for constructing service station 79th St. and N. E. Third Court.

Fla., Palatka—Sinclair Refining Co., Sinclair Bldg., Tulsa, Okla., erecting 1 story, conc. and stucco filling station, N. E. Cor. Second and Reid Sts.; grading completed; install Bowser electric pumps air washing and greasing equipment. 4-11

Fla., Tampa—Guaranty Motor Co., incorporated; R. R. Wight, 4203 San Pedro St. Ga., Boston—Will Lane, Quitman, has contract for remodeling building, Main and Jefferson Sts., into filling station.

Ga., Macon—Firestone Tire & Rubber Co., Akron, O., and 658 Whitehall St., Atlanta, reported, rejected bids for service station, Mulberry St.; cost \$20,000; following contractors asked to bid, following revision of plans: Norwood Griffin Co., Bona Allen Bldg., Atlanta; R. H. Smallings & Sons, Fourth Natl. Bank Bldg.; M. E. Shaw, 1605 Vineville Ave.; Chas. W. Jones, W. A. Stillwell & Son, both Grand Bldg., and W. D. Griffin, 210 Winship St., all Macon. 8-14

Mo., Jefferson City—Laclede Steel Co., Arcade Bldg., St. Louis, reported, has contract for 160 tons rein. steel for garage for Missouri Highway Comsn. 9-11

Mo., Jefferson City—Skelly Oil Co., Arthur Larberg, Const. Supt., Twenty-fifth & Madison St., Kansas City, reported, plans filling station; 1 story; 18x24 ft.

Okla., Oklahoma City—Yellow Cab Co., 113 S. Sante Fe St., reported, let contract to Ross E. Thomas, Commerce Exch. Bldg., Oklahoma City, for garage and filling station, 200 E. Third St.; 1 and 2 story; brick, tile and conc.; Leonard H. Bailey, Archt., Colcord Bldg. 9-4

Okla., Oklahoma City—Peltier & Fitzgibbons erecting \$13,000 garage for Mrs. Mary Bachle.

N. C., Charlotte—Victor Shaw Tire Co., 228 N. College St., let contract to T. C. Thompson & Brothers, 609 N. Smith St., for super-service station; brick, struc. steel, comp. roof Lockwood, Greene Engineers, Inc., Montgomery St., Spartanburg, S. C., engrs.

S. C., Spartanburg—Craig & Zimmerman, Inc., chartered; James M. Zimmerman, 235 Plume St.

Tenn., Johnson City—City Service Station, capital \$10,000; J. D. Garner, H. H. Wilton.

Tenn., Memphis—Jno. T. Mahoney, 1010 N. Parkway St., has plans in progress by Louis Carlisle, Medical Arts Bldg., for 1 story garage Bristol Highway; cor. iron roof; 40x60 ft.

Tenn., Memphis—Wolf & Walker, Empire Bldg., reported, let contract to L. C. Walker, 975 Walker Ave., for filling station S. W. Cor. Mill and Seventh Sts.; brick veneer; 1 story.

Tex., Big Springs—Flewellen's Service Incorporated; V. H. Hayward, L. C. Flewellen.

Tex., Crystal City—Andrew Smyth, stone walls, tile roof; Will N. Noonan Co., Uvalde, erect filling station; 1-story, rough Archt., Builders Exchange Bldg., San Antonio.

Tex., Dallas—P. B. Brake Service Co., incorporated; James Y. Schoonmaker, 4202 Avondale St.

Tex., Mexia—Hyway Service Station, incorporated; John W. Swann, John H. Swett.

Tex., Port Arthur—Firestone Tire & Rubber Co., Akron, O., completing plans for \$50,000 service station. 5-22

Tex., Ranger—Leveille Mayor Motor Co., capital \$25,000, incorporated; Morris Leveille, C. A. Smith.

Tex., Waco—Independent Tire Co., incorporated; L. V. Scott, 1802 Seneca Ave.

Va., Norfolk—Texas Co., Houston, Tex., reported, erect service station Granby and Broadway Sts.

Gas and Oil Enterprises

Ark., Harrison—C. M. Murchison, Southern Union Gas Co., Chicago, Ill., reported, granted 25 yr. gas franchise.

Georgia—Southern Cities Public Service Co., Gas Bldg., Atlanta, reported, acquired half interest in Georgia Natural Gas Co., Watts Bldg., Birmingham, Ala., affiliated with Southern Natural Gas Corp., owning and constructing pipe line Monroe and Richland, La., throughout Southeast; franchises have been granted to Georgia Natural Gas Co. in number of cities in Georgia.

Kentucky—Central Public Service Corp., 105 W. Adams St., Chicago, Ill., reported, begin work in Oct. on 260 mile pipe line, Kentucky-Indiana; line will be constructed by Central Indiana Gas Co., a subsidiary. 8-28

Miss., Amory—Southern Natural Gas Corp., Watts Bldg., Birmingham, Ala., reported, negotiating for Amory Natural Gas Co.

Miss., Jackson—Universal Gas Co., New Merchants Bank Bldg., reported, plans carbon black plant; install air compressors and other equipment.

Miss., Jackson—City votes Oct. 20 on proposed franchise of Mississippi Power & Light Co. to furnish natural gas from local field. 8-7

Miss., Laurel—Southern Natural Gas Corp., Watts Bldg., Birmingham, Ala., reported, acquired Laurel plant of Mississippi Gas Co.

Miss., Wiggins—Mississippi Gas & Electric Co., Jackson, reported, has gas franchise.

Mo., St. Louis—Standard Oil Co., 814 N. Jefferson Ave., reported, let contract to Martin P. Rossenmeyer, 111 Title Guaranty Bldg., for bulk plant Easton & Grove Aves.; brick and conc.; 1 story and basement; 72x117 ft.

Mo., St. Louis—Lubrite Refining Corp., 3504 Washington St., reported, acquired filling station and property S. W. Cor. Twelfth Blvd. and Chouteau Ave.; may erect building.

Missouri—Missouri Power & Light Co., Jefferson City, reported, granted gas franchises at Farber, Wellsville, Laddonia and Sturgeon; applied for 20 yr. gas franchise at Hallsville.

Mo., Sedalia—Phillips Petroleum Co., Bartlesville, Okla., reported, begin immediate construction pipe line through Pettis county; about 95% right of way secured, work to begin at Holden; refined gasoline will be sent through pipe line from refineries in Texas; starting point of pipe line is at Borger, Tex., running north and east to Oklahoma, Kansas and Missouri crossing River about 20 miles south of St. Louis.

Oklahoma—Stockholders of Independent Oil and Gas Co., Philtower Bldg., Tulsa, vote Sept. 30 to take action on adoption of agreement for acquisition of all assets of Independent Oil and Gas Co. by Phillips Petroleum Co., Bartlesville; consolidated company to have total of over 3600 producing wells, Texas, New Mexico, Oklahoma, Kansas, Kentucky and Louisiana; will have 3 refineries in Borger, Tex., Okmulgee, Okla., and Kansas City, Kan. 9-11

Okla., Oklahoma City—Great Southern Petroleum Co., capital \$15,000, chartered; William Slusher, Enid.

Okla., Oklahoma City—Madison Petroleum Co., capital \$50,000, chartered; John E. Dickson, Petroleum Bldg., Oklahoma City; V. A. Manahan, Allen.

S. C., Abbeville—A. DePowell, representing Johnson, Church & Co., 149 Broadway, New York, reported, has gas franchise.

S. C., Aiken—Georgia Public Utilities Co., Griffin, Ga., controlled by Southern Cities Public Service Co., 105 N. Adams St., Chicago, Ill., reported, erect plant Barnwell Ave. and Kershaw St.

Tennessee—Tennessee Gas Co., 22 W. Monroe St., Chicago, Ill., and Murfreesboro, reported, has franchise in Pulaski, Harriman, Rockwood, Etowah and Fulton; begin work soon on gas lines.

Tenn., Memphis—Memphis Natural Gas Co., reported, plans increasing capacity of pipe line from Monroe, La., to Memphis, to more than 70,000,000 ft. daily; cost of additional equipment \$50,000.

Tenn., Memphis—Standard Oil Co. of Louisiana, T. B. Sanders, 1211 Union Ave., plans storage tanks at 492 Wisconsin St.; steel and conc.; three 95x42 ft. for fuel oil; 60x35 ft., for gas; cost about \$100,000; construction by owners.

Tex., Borger—Phillips Pipe Line Co., Bartlesville, Okla., subsidiary of the Phillips Petroleum Co., has pipeline under construction from Borger to St. Louis, Mo., by Kelly and Dempsey Co., Hunt Bldg., Tulsa, Okla., contractors for laying the complete line; contract for 4-wire telephone line from Borger to Harrisonville, Mo., and with branch from Bartlesville, Okla. to Wichita, Kans., let to Graner Contracting Co., 2317 Tennessee St., St. Louis. 7-17

Texas—N. A. Saigh, Builders Exchange Bldg., San Antonio, reported, has contract for gas line and distribution systems, Crystal City and Carrizo Springs, for Texas Gas Utilities Co., Del Rio; cost \$250,000. 8-28

Tex., Austin—Capitol City Oil & Gas Co., capital \$50,000, incorporated; Bliss R. Spillar, 312 W. Twenty Eighth St.

Tex., El Paso—Del Norte Oil Co., Inc., chartered; R. Q. Scott, 3922 La Luz St.

Tex., Fort Worth—Rowan & Nichols Oil Co., capital \$20,000, incorporated; A. H. Rowan, 2629 Lubbock St.

Tex., Houston—Sinclair Refining Co., 45 Nassau St., New York, advises, do not know of any \$2,000,000 expansion contemplated at Houston refinery, as lately noted, reported. 9-4

Tex., San Antonio—Yorktown Oil & Gas Co., incorporated; R. L. Strickland, 102 Bartlett St.

Tex., San Antonio—Garfield Oil Corp. incorporated; J. T. Jamison, 101 E. Craig St.

Tex., Violet—Houston Oil Co., Petroleum Bldg., Houston, reported, let contract for refinery.

Virginia—William T. Amis, representing McBest Gas Co., New York, and Atlantic Gas Co., Lewis Bldg., Philadelphia, Pa., reported, negotiating for gas franchise Big Stone Gap and Appalachia.

Va., Alexandria—Seaboard Investment Trust, Boston, Mass., reported, negotiating for municipal gas plant.

Va., Roanoke—Roanoke Gas Light Co., 112 Church Ave., S. W., reported, let contract to Isbell-Porter Co., Newark, N. J., for gas-bench building, cost \$54,000, increasing coal gas capacity from 750,000 cu. ft. to more than 1,000,000 cu. ft. daily; Virginia Bridge & Iron Co., Roanoke, has contract for steel work; also, reported, that 2 benches will be rebuilt next spring, at cost of \$25,000.

Va., Luray—E. A. Macbeth & Co., 120 Broadway, New York, has gas franchise; plans erecting plant and pipe line. 8-7

West Virginia—W. J. Hightower, representing Columbia Gas & Electric Corp., 60 Broadway, New York, reported, acquired 7 gas and oil companies with monthly gas production of 200,000,000 cu. ft. and monthly production of 3000 bbls.; companies are: Old Colony Oil and Gas Co., McIntyre Oil & Gas Co., Allen Oil & Gas Co., Transylvania Oil & Gas Corp., Marcum Oil Co. and Superior Oil & Gas Co.; companies control 24,000 acres in Mingo county, 5000 in Logan county and 17,000 in Wayne county. 9-11

Ice and Cold-Storage Plants

La., Harvey—George J. Glover Co., Inc., Whitney Bank Bldg., New Orleans, has contract for construction of 117x117 ft., brick, hollow tile, steel and fireproof cold storage plant on pile foundations for Penick & Lord, Ltd.; bids now being received by contractors for heating, ventilating, electric wiring, plumbing and sewerage, 16 storage tanks, piping and pumps, wall treatment, floor and ceiling for insulation and refrigeration machinery, piping and coils; cost of building \$150,000.

Va., Hopewell—Southside Marketing and Finance Corp., Box 754, plans erecting cold storage plant of 100 car storage capacity, with a 20 ton ice plant in connection; erect 5 canning plants in counties adjacent to Hopewell; construction to start about Jan., 1931; C. C. Lewis, Engr. in charge of construction and purchasing equipment; no contract let; no equipment purchased. See Want Section—Machinery and Supplies. 9-11

W. Va., Pennsboro—Pennsboro Ice & Power Co., Herbert E. Hopkins, advises plans not complete as yet for rebuilding burned plant; will probably rebuild plant or construct unit for car icing. 9-11

Iron and Steel Plants

Ala., Fairfield—Tennessee Coal, Iron & Railroad Co., H. C. Ryding, Pres., Brown-Marx Bldg., Birmingham, reported, let contract to Virginia Bridge & Iron Co., Birmingham, for 400 tons struc. steel for plate mill and other developments. 7-24

Land Development

Ark., Hot Springs—Fountain Lake Corp., J. M. Yeager, Drew, Miss., and A. J. Scull, 2109 Marshall St., Little Rock, expend \$100,000 for improvements to 30 acres at Fountain Lake.

Fla., Bunnell—Deep Creek Farms Co., incorporated; L. S. and E. W. Cody.

Fla., Miami—Gibbs Operating Co., Inc., chartered; L. E. Needles, 1764 S. W. 10th St.

Fla., Dania—Wessett Land Co., incorporated; R. J. Davis, B. Anderson.

Fla., St. Petersburg—A. D. Powers, Tarpon Springs, and associates, reported, acquired Eagle Crest subdivision, including light and water system, parkways, etc.; chartered Eagle Crest, Inc., to develop.

Fla., St. Petersburg—Pennsylvania Realty & Investment Co., incorporated; W. W. Baker, 6935 Date Palm Ave.

Fla., St. Petersburg—Balder Co., Inc., chartered; G. P. Byron, Hall Bldg.

Fla., Tampa—A. Van Ekod, Palm River, acquired and will develop 194 acres in Harney section for citrus grove.

Ga., Atlanta—Crown Hill Cemetery Co. and Crown Hill Mausoleum Co. developing new section of cemetery; build roads, barn and shops, Sexton's house and office; wrought iron gates. 9-4

La., New Orleans—Jefferson Beach Park, Inc., Thomas J. Arculeur, Mgr., 316 Carondelet St., develop nine squares of Bonabel Estate in Jefferson Parish on Lake Front for amusement park and beach; construct buildings, walks and piers; landscape; Mr. Arculeur in charge of project; to be opened in April, 1931.

Md., Baltimore—Park Board, Winfield F. Courts, Engr., immediately start laying 30,000 ft. of pipe for sprinkling system at municipal golf course now under construction at Mount Pleasant Park.

Mo., Macon—C. W. Wittschen, Inc., C. W. Wittschen, J. W. Fitzpatrick.

Mo., Sedalia—Sedalia Public Golf Club, capital \$25,000, chartered; Charles Hanley, 509 W. Broadway.

Mo., St. Louis—Stock & Son Realty Co., capital \$50,000, incorporated; Harry H. Stock, Jr., 4893 Sacramento Ave.

Mo., St. Louis—Delu Realty Co., incorporated; Emanuel Weil, Bank of Commerce Bldg.

N. C., Charlotte—McClintock Corp., W. B. McClintock, developing \$20,000 golf course on Lawyers Rd.; erect club house, etc.

N. C., Concord—Concord Amusement Co., capital \$25,000, incorporated; G. W. Smith, Lexington.

N. C., Fayetteville—Vanstory-Show Realty Co., capital \$50,000, incorporated; T. M. Shaw, W. A. Vanstory.

S. C., Rock Hill—W. E. Simpson, Inc., chartered; W. E. Simpson, J. L. Bundy.

Tex., Fort Worth—River Crest Estates, capital \$30,000, incorporated; J. Mentor Caldwell, First Natl. Bldg.

Tex., Highlands—Tyrrell & Garth Investment Co., reported, acquired 1600 acres; surveyors dividing property into tracts; lay roads, etc.; erect 100 houses.

Tex., Houston—Bilgo Sales Corp., chartered; Harry J. French, 102 E. Eastgate St.

W. Va., Bluefield—Woodlawn Memorial Park Co., capital \$105,000, incorporated; E. C. Dunning, Bailey St.

Lumber Enterprises

Va., Rosslyn—W. W. Rucker and J. E. Rucker, reported, acquired George Taylor Lumber Co.; applied for charter.

Mining

N. C., Fontana—North Carolina Exploration Co., recently incorporated in Delaware and legally represented by R. M. McConnell, Burwell Bldg., Knoxville, Tenn., acquired property known as Fontana Mine; purchase subject to lease from the Montvale Lumber Co. giving the Ducktown Chemical & Iron Co., doing business through Fontana Mining Corp., the right to operate the mine until Feb. 6, 1931, when the real estate and all personal property will be surrendered to the purchasing company, which is now engaged in acquiring other land in North Carolina; H. M. Thompson, 238 W. 129th St., New York, reported interested. 9-4

S. C., Columbia—Carolina Gravel Corp. chartered by G. E. Walker, E. D. Walker, Z. C. Berry; mine gravel, sand and chert.

Tex., Freeport—Freeport Texas Co., Chan-in Bldg., 122 E. 42nd St., New York, advises construction work at this time consists of prospecting operations being conducted by Freeport Sulphur Co.; if sulphur in paying quantities is found, will construct a plant and develop property; at present time only work being done is drilling operations. 9-11

W. Va., Charleston—National Lead Co., 111 Broadway, New York, reported, acquired lead plant of Evans-Wallover Lead Co.; Evans Lead Co., Stop 1, has been incorporated under laws West Virginia to operate as subsidiary of the National, Marshall Evans, V. P. and Gen. Mgr.; Charleston plant of Evans Lead Co. and mining properties of Golden Rod Mining & Smelting Co. were merged in Jan., 1928.

Miscellaneous Construction

Fla., Canaveral—Canaveral Pier & Fish Co., Henry W. Ewing, let contract to Cahow Construction Co., Fort Pierce, for 300-ft. extension to pier.

Fla., Jacksonville—U. S. Engr. Office, opens bids Oct. 8 for constructing 2 guide fences within jetties at Volusia Bar, St. Johns River.

Fla., St. Augustine—City, S. C. Cole, Mgr., authorized by City Comsn. to call bids for incinerator.

Ga., Gainesville—City, Dan S. Benton, City Mgr., construct \$25,000 swimming pool and bath house, city park, N. Green St.; pool, 75x125 ft.; private plans; construction probably by owner; J. E. Sirrine & Co., Engr., Greenville, S. C.

Kentucky—Fill—See Bridges, Culverts and Viaducts.

Louisiana—U. S. Engr. Office, foot of Prytania St., New Orleans, has low bids for about 67,000 cu. yd. earthwork, Second New Orleans Dist., designated as follows by name, estimated yardage, bidder, price bid: Atchafalaya Levee, 16,500, Acme Construction Co., Point a la Hache, 25 cents; Lafourche Levee, 8600, Wm. Junkin, 502 Madison St., Natchz, Miss., 34.95 cents; Willow Grove Levee, 9200, Wm. Junkin, 34.95 cents; Willow Grove Levee, 8200, Wm. Junkin, 34.95 cents; Willow Grove Levee, 9200, Wm. Junkin, 34.95 cents; Donaldsonville Levee, 20,000 O. O. Ogden, Louisiana Natl. Bank Bldg., Baton Rouge, 41 cents.

Louisiana—Bd. of State Engrs., New Orleans Court Bldg., has low bid from Ernest L. McCain, 2204 Fairfield Ave., Shreveport, at \$24,000 for supplemental work and repairs to existing bank protection, Red River, left bank, Bossier Parish, including Cat Island Bend and Honore Bend. 9-4

La., New Orleans—Bd. of Commrs. of Port of New Orleans, New Orleans Court Bldg., has low bid from Lukens Steel Co., Industrial Canal, for furnishing, erecting and painting struc. steel framing for Mandeville St. wharf, 1100 tons, at \$69.73 per ton; from Virginia Bridge & Iron Co., Whitney Bldg., for same work on Bienville St. wharf, 750 tons, at \$75.70 per ton. 7-31

Missouri—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, received only one bid for constructing crib dyke 850 ft. long. Baders Front, Mo.—Wood Bros. Construction Co., Lincoln, Neb., \$51,670. 8-14

Mo., Kansas City—Kansas City Terminal Co., John V. Hanna, Ch. Engr., soon start constructing \$85,000 tunnel connecting basement of new terminal post office and mail loading docks at Union Station; Treasury Dept., Jas. A. Wetmore, Supvg. Archt., install mail conveyor system.

Okl., McAlester—G. H. Newton has preliminary plans for swimming pool; \$25,000.

Tex., Corpus Christi—City, P. G. Loven-skiold, Mayor, may vote Oct. 14 on \$1,600,000 bay front improvement bonds.

Tex., Jasper—Texas Game, Fish and Oyster Comsn., Wm. J. Tucker, Exec. Sec., Austin, let contract to C. L. Flournoy, Jasper, for \$55,000 fish hatchery; Joe Marks, Engr., Jasper. 8-28

Tex., Palestine—Walter Cook, Neches, and A. O. Young constructing \$10,000 dam across creek, 5 mi. from here on Neches Highway, forming 150-acre artificial lake for public resort; dam to be about 1200 ft. long.

Tex., Sabine Pass—Ch. of Engrs., U. S. Army, Washington, D. C., authorized repairs to west jetty A, placing 9000 tons cap stone and 12,000 tons core stone and replacing 300 tons cap stone; U. S. Engr. Office, Galveston, soon call for bids.

Va., Covington—Following have sub-contracts in connections with Lewis tunnel of Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond: East approach cut, H. E. Culbertson Co.; Union Trust Bldg., Cleveland, Ohio; west approach cut, Waugh Bros., Inc., Fayetteville, W. Va.; Bates & Rogers Construction Co., Gen. Contr., Engineers Bank Bldg., Cleveland, Ohio, sinking shaft on 33 degree slope through which they plan removing heading while approach cuts are being taken out, shaft down about 80 ft. now. (Contract notice let 7-24.) 7-24

Miscellaneous Enterprises

Ala., Montgomery—George A. Hormel & Co., Austin, Miss., reported, acquired Montgomery plant of Cudahy Bros. Co., on Coosa St.

Ark., Jonesboro—Jonesboro Rice Milling Co., Harry E. Boyay, Pres., Dermott Bldg., Memphis, Tenn., organized to build 600-barrell rice mill to cost \$125,000, on site formerly occupied by Roberts Cotton Oil mill; start work at once.

Fla., Gainesville—Modern Dry Cleaning Co., Inc., chartered; S. L. Carter, J. M. Halle, Jr.

Fla., Jacksonville—Mac Automatic Copy Holder incorporated by Rev. D. Milton McCauley, South Jacksonville, reported, plans plant for production of patented copyholder; F. O. Hindle, production manager; offices in Belote Bldg., South Jacksonville, after Oct. 1.

Fla., Miami—Majestic Cleaners, Inc., chartered; H. E. Cunio, 2742 N. W. 22nd Court.

Fla., Miami—Celo Co., P. O. Wall, Tampa, manufacturers of soft drink, installing \$100,000 machinery in plant; capacity 84,000 bottles daily; leased 2 story building 174 N. E. First St., for distribution plant; constructing plants at Miami Beach and Orlando.

Fla., Miami—McArdle Corp., chartered by S. Silverman, City Natl. Bank Bldg.; dredging and construction.

Fla., St. Petersburg—St. Petersburg Match Co., capital \$20,000, chartered; S. M. Friede, S. A. Curry; will manufacture patented safety matches; plant to be in operation in about 90 days; later plans manufacture match machines for export, also machines for making box matches.

Ga., Augusta—J. J. Stafford, reported, acquired Barrett Food Products Co., Reynolds St.

Ky., Hopkinsville—Hopkinsville Laundry & Dry Cleaning Co., capital \$42,000, incorporated; C. L. Morgan, Frederick M. Herfurth.

La., Baton Rouge—Dr. Pepper Bottling Co., reported, plans constructing bottling plant on Jefferson Highway; cost \$35,000.

La., Jennings—Franklin Hildebrand, Elkin, N. C., reported, acquired McLease Publishing Corp., publishers of Jeff Davis Parish Weekly News.

La., New Orleans—Karl Hansen Co., Inc., 121 N. Robertson St. (Store Equipment), receiving bids on steel sash, steel trusses, brick work, asbestos corrugated roof, sheet metal work, steel curtain doors and Kalamein doors in connection with erection of 1 story, 69x250 ft., rein. conc., brick and steel truss factory and warehouse building on Poydras St.; bids opened for foundation work, contract not let; Rathbone DeBuys, Archt., Hibernia Bank Bldg., New Orleans.

La., New Orleans—Lionel Favret, Louisiana Bldg., reported, has contract for 4 story building Canal St., for Singer Sewing Machine Co., 1018 Canal St.; steel and conc.; pile foundations; floors and roof of conc.; limestone front with granite trim in Colonial design; cost \$100,000; Favret & Livaudais, Ltd. Hibernia Bldg.

Md., Baltimore—City Baking Co., 310 N. Gay St., let contract to John Kunkle, 29 S. Linwood Ave., for addition, High St.; 1- and 2-story, 60x160 ft. and 27x35 ft.; includes packing room, loading platform, boiler room, offices and shop; brick, steel trusses, timber floor and roof construction; \$30,000; Lucius R. White, Archt., Court Sq. Bldg.

Mo., Kansas City—Hill Candy Co., Inc., incorporated; E. G. Hill, 423 Delaware St., Kansas City.

Mo., Kansas City—Neuner Construction Co., incorporated; M. K. Jackson, 708 E. 40th St.

Mo., Kansas City—Lowry Vault Co., capital \$25,000, incorporated; James M. Lowry, 316 Exchange Bldg., Kansas City.

Mo., Kansas City—U. S. Farm Sales Co., Salina, Kans., reported, leased 2-story and basement building, 510 W. Fifth St., for harness and saddle manufacturing plant.

Mo., St. Louis—Breckenkamp Printing Co., capital \$25,000, incorporated; August H. Breckenkamp, Washington; August W. Breckenkamp, 3715 Dunnica St.

Mo., St. Louis—Anchor Candy Co., capital \$20,000, incorporated; Hugo Eisenmenger, 3524 Bamberger St.

Mo., St. Louis—West End Sign Co. incorporated; Paul R. Herbig, 1239 Arch Terrace.

Mo., St. Louis—St. Louis Screw & Bolt Co., 6900 N. Broadway, advises will erect building 100x180 ft. with extension on one side 40x60 ft.; building will house open hearth plant with one 40 ton furnace; construction contracts have not yet been completed. 9-11

Mo., St. Louis—Real Estate Co., 1900 Pine St., reported, expend \$15,000 improvements loft building; J. W. Morrison, Builder.

Mo., Washington—Nieburg Sausage Co. incorporated; Emil L. Nieberg, Edmund Zeller.

N. C., Rockington—Pee Dee Monument Co., capital \$50,000, incorporated; W. H. McCall, T. Boyce Henry.

Okl., Oklahoma City—Great Southwestern Life Insurance Co., chartered, capital \$350,000; James I. Phelps Security Bldg.

Okl., Tulsa—Mistletoe Dairy, Inc., capital \$25,000, chartered; Carl L. Rice, World Bldg.

Tenn., Nashville—Watts Laundry Co., 315 Fifth Ave., reported, erecting laundry, 217 Fifth Ave., S.; conc. foundation; brick and conc.; steel sash.

Tex., Austin—McCamey Sewer Co., incorporated; D. L. Anderson, 4203 Ave. C.

Tex., Dallas—Novelty Advertising Corp., capital \$500,000, incorporated; W. F. Gordon, 4804 Live Oak St.

Tex., Dallas—Dort Door Check Co. incorporated; T. S. Williams, 617 Center St.; manufacture household appliances.

Tex., Harlingen—Campbell Bowling Alleys, Inc., capital \$24,000, incorporated; W. J. and W. A. Campbell.

Tex., Houston—Patton Printing Co., capital \$30,000, incorporated; L. J. Patton, 1642 Marshall St.

Tex., Houston—Neon Metlox Signs Co., capital \$100,000, incorporated; James Irwin Handley; illuminated bill board advertising.

Tex., Spring—Bayer Excelsior Mfg. Co., Houston, reported, plans addition to warehouse.

Tex., Tyler—Crescent Laundry increased capital \$20,000 to \$50,000.

Tex., Tyler—Tyler Baking Co., incorporated; J. K. Oliver, Sam Roosth.

W. Va., Wheeling—Polites Confectionery Co., capital \$25,000, incorporated; Peter Polites, 880 McColloch St.

Motor Bus Lines and Terminals

Md., Salisbury—Day & Zimmermann, Inc., 112 N. Broad St., Philadelphia, Pa., advises

contract for building work for office and garage let to Albert L. Disharoon, Salisbury; J. N. Kennedy, Engr.

Mo., Kansas City—Safety Cab Co., incorporated; Louis H. Borserline, 3809 Benton Blvd.

Mo., Kansas City—Anderson Motor Service Co., 725 Biddle St., St. Louis, will occupy building, Missouri Ave. and Oak St. to be erected by Atlas Paint & Glass Mfg. Co., Joseph Oliver, Pres., 600 Independence St.; building will be 1 story, 17,000 sq. ft. floor space; cost \$30,000.

N. C., Charlotte—Charlotte Motor Co., capital \$100,000, chartered; W. A. Masterman, 2108 Greenway.

Tenn., Knoxville—R. E. Gettys, of Fidelity Bankers Trust Co., reported, plans escalator to second floor, new front, to cost \$20,000, and other improvements to Union Bus Terminal building on Gay St.; install ventilating system; Manley & Young, Archts., Maplehurst Park, and Weaver & McGill, Contrs., General Bldg.

Railways

Ky., Carrollton—Louisville & Nashville R. R. Co., W. H. Courtenay, Ch. Engr., Louisville, authorized by Interstate Commerce Comsn., Washington, to acquire Carrollton R. R., operating in Carroll County; Carrollton R. R. authorized to acquire property of Carrollton & Worthville R. R., P. F. Manning, Carrollton, owner, and to issue \$1 capital and \$25,000, 6% mortgage notes to be used in connection with acquisition.

Texas—Atchison, Topeka & Santa Fe Ry., M. J. Collins, Gen. Pur. Agt., Chicago, Ill., inquiring for 10 horse express cars, 79 ft. long.

Texas—Texas & Pacific Ry. Co., J. L. Lancaster, Pres., Dallas, advises regarding 333 mi. of line to be constructed into West Texas, line will traverse agricultural section; construct first-class railroad with appropriate passing, yard and terminal tracks, stations and other buildings, all of modern type and construction; 85-lb. rail, crushed stone or gravel ballast and crosotied ties; greater part of line to traverse high plateau, with maximum gradient of approx. 1/2 of 1% and 2 degree curves; lines to Amarillo and Lubbock will not be branch lines; E. F. Mitchell, Ch. Engr., Dallas. 9-4

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Alabama—State Highway Comsn., Woolsey Finnell, Director, Montgomery, has low bids for 3 road and 2 bridge projects: Mobile County—12.95 mi. conc. cement, between Mobile and Axis, from State Bd. of Administration, Montgomery, \$143,707; Jefferson County—28.57 mi. Bankhead Highway, State Bd. of Administration, \$486,987; bridges for same project, W. C. Howton, Birmingham, \$54,063. 8-21

Alabama—State Highway Comsn., Woolsey Finnell, Director, opens bids Sept. 30 for 2 roads and 5 bridge projects: Shelby-Jefferson Counties—26.45 mi. grading, draining, surfacing, Harpersville to Birmingham, \$81,555 cu. yd. excavation, 2326 cu. yd. conc. in culverts and headwalls, 650 lin. ft. conc. bridges; Calhoun-Cleburne Counties—13.79 mi. grading, draining, surfacing, Piedmont to Georgia state line, 300,837 cu. yd. excavation, 75,260 lb. rein. steel, 33,348 lin. ft. guard rail cable, 1098 guard rail posts, 4 conc. bridges.

Ark., Little Rock—Street Improvement Dist. No. 516, Ken Cole, Chmn., Bd. of Commrs., organized to pave streets in Normandy Addition; \$30,000.

Florida—State Road Dept., B. M. Duncan, Engr., Tallahassee, opens bids Sept. 23 for materials for 6 road projects.

Florida—State Road Dept., B. M. Duncan, Engr., Tallahassee, authorized building 4 roads: 20-ft. road, No. 5, Hillsborough County, leading into Tampa; No. 17, Auburn-

dale to Lakeland, and resurfacing roads No. 3 and 4, Duval County.

Ga., Hogansville—City, Mayor and Council receives bids Sept. 26 for street improvements and storm drainage on several streets; plain conc., vibrolithic conc. or brick paving; 8500 sq. yd. paving, 4000 lin. ft. curbing, 13,500 brick for catch basins and manholes, 10,700 lb. cast iron, 1300 lin. ft. 15-in. to 24-in. storm sewer pipe.

Kentucky—State Highway Dept., H. D. Palmer, Engr., Frankfort, has low bids for 21 roads and 8 bridge projects: Adair County—10,271 mi. grading, draining, Columbia Liberty road, Hoke Co., Buechel, \$84,735; Allen County—9,182 mi. grading, draining, surfacing, Tennessee St. Line-Scottsville road, Thomas Ruth & Co., Frankfort, \$234,856; Bath-Montgomery Counties—12,940 mi. grading, draining, Fields Highway, Ashland Supply Co., Ashland, \$175,858; Calloway County—8,866 mi. grading, draining, Murray-Tenn state line, J. M. Perkins Co., Frankfort, \$39,659; Crittenden County—13,162 mi. surfacing, Marion-Morganfield road, Petri & Partee, Lewisport, \$180,578.

In Fleming County—11,002 mi. grading, draining, surfacing, Jas. C. Macht, Newport, \$182,721; Garrard County—4.8 mi. grading, draining, surfacing, Wilmore Construction Co., Wilmore, \$37,139; Grayson County—6,036 mi. surfacing, Alex. Dunn Construction Co., Corbin, \$25,645; Henderson County—11,619 mi. surfacing, Robinson-Gregory Co., and Hart & Hart, both Owensboro, \$193,950; Jackson-Clay County—20,442 mi. surfacing, D. L. Walker & Co., Lexington, \$148,048; Jessamine County—5,223 mi. surfacing, Nicholasville-Lancaster road, R. H. Waters, Boston, Ky., \$23,743; Johnson-Floyd Counties—9,733 mi. surfacing, Prestonburg-Paintsville road, W. T. Congleton Co., Third and Walton St., Lexington, \$198,433.

In Lincoln County—4,585 mi. grading, draining, surfacing, Stanford-Hustonville road, J. M. Perkins Co., \$66,245; Marshall County—12,083 mi. surfacing, N. E. Stone & Co., Madisonville, \$23,778; Martin County—10,717 mi. surfacing, H. R. Longabaugh & Co., Louisville, \$58,380; Muhlenberg County—7,998 mi. surfacing, Central City-Rockport road, Corum Bros., Madisonville, \$21,840; Ohio County—6,017 mi. surfacing, Beaver Dam-Rockport road, Corum Bros., \$31,482; Perry-Knott Counties—12,851 mi. surfacing, Dwarf-Hindman road, H. H. Miller, Jackson, \$51,638; Perry-Leslie Counties—18,599 mi. surfacing, Hazard-Hyden road, S. J. Boone, 200 McDowell Road, Lexington, \$163,352; Powell County—2,623 mi. surfacing, Salde-Natural Bridge road, North Fork Construction Co., Jackson, \$85,443; Union County—9,616 mi. grading, draining, surfacing, Morganfield-Wannamaker road, Corum Bros., \$52,399.

Following are low bidders for bridges: Galatin County—conc. sub and superstructure, Carrollton-Warsaw road, J. M. Perkins Co., \$20,975, for substructure, Brookville Bridge Co., Brookville, Ohio, \$13,243, superstructure; Lewis County—substructure and approach, Vanceburg-Greenup road, J. M. Perkins Co., \$20,471; steel superstructure, Vanceburg-Greenup road, E. R. Mills, Kanawha Ave., Charleston, W. Va., \$29,945; Morgan County—bridge over Licking River, West Liberty, substructure and approaches, J. M. Perkins Co., \$30,874, steel superstructure; International Steel & Iron Co., Evansville, Ind., \$11,996; Perry County—conc. substructure and approach fill, Typo-Chavies road, J. M. Perkins Co., \$15,095, steel superstructure, E. R. Mills, \$16,877.

Ky., Lexington—City, Dept. of Public Works, considering extending Seventh St., N. Broadway to Price Ave.; J. White Guyn, City Engr.

La., Bastrop—Morehouse Parish Police Jury opens bids Oct. 14 for building earth road bed and installing drainage structures, Proj. No. 100, near Perryville connecting with present Bastrop-Perryville State Highway; J. Lester White, Parish Engr.

La., Baton Rouge—State Highway Comsn., W. H. Norckauer, Engr., opens bids Sept. 30 for furnishing material for maintenance required for October, including washed and screened gravel, 4% sand clay gravel, road shell, clam shell, crushed limestone, slab and sand.

La., Baton Rouge—Louisiana State Highway Comsn., W. H. Norckauer, Engr., Baton Rouge, opens bids Sept. 30 for 3.3 mi. grading, draining, Luna-Vixen Highway, Ouachita Parish, Route 200, Proj. 773-A.

La., Lake Charles—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, plans 34-ft. pavement, Front St.; \$50,000.

La., Tallulah—Madison Parish Police Jury, P. O. Benjamin, Sec. and Engr., opens bids Oct. 1 for 9 mi. gravel, Oak Grove-Hermion-Thomastown road.

Md., Baltimore—City, Bd. of Awards, has low bids for 2 projects: No. 500, Arundel Construction Co., 910 Trinity St., \$29,362; No. 561, W. G. Gischel & Sons, Inc., Curtis Ave. and Filbert St., \$9427.

Maryland—State Roads Comsn., Baltimore, opens bids Sept. 23 for 5 roads: Baltimore City—0.91 mi. sheet asphalt, Moravia Ave., Belair road to Harford road, Cont. No. BC-96-74; Prince George's County—1.17 mi. conc., Silver Hill to Suitland, Cont. P-138-34; 1.2 mi. hot or cold bit. mixtures resurfacing, Cheverly road, Landover road to Tuxedo, Cont. P-139-32; 0.9 mi. penetration macad. resurfacing, River road to Tuxedo, Cont. P-14-34; .06 mi. conc. shoulders, Main St., Laurel, Baltimore-Washington Blvd. toward Scaggsville Bridge, Cont. P-141-32.

Miss., Canton—Highway Comsn. of Dist. No. 3, Madison County, opens bids Oct. 7 for graveling 5 mi. Goodloe road; 2000 yd. gravel.

Miss., Hazelhurst—City, Mayor and Bd. of Aldermen, opens bids Oct. 7 for 720 sq. ft. sidewalk.

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, probably let contracts in October for 6 roads: Barry County—22 mi. Highway 44, Caseville to Stone County line; Newton County—2 mi. supplementary highway, Fairview to Highway 97; 5.5 mi. supplementary highway, Granby Corner south; 10 mi., Highway 71 AP, Newton County line to Highway 16; Jasper County—6 mi. supplementary highway, Highway 66 west of Carthage, west; Lawrence County—12 mi., Highway 39, Mount Vernon north.

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, let contracts as soon as right-of-way deeds are obtained for 12 roads: Bates County—6 mi. supplementary highway, Rich Hill to Hume; 4 mi., Highway 52, Virginia west; Barton County 3 mi., Highway 12, Golden C. north and east; McDonald County—6 mi. supplementary highway, Highway 44 to Powell; Jasper County—11 mi., Highway 38, Sarcoxie east and west; Cedar County—5 mi., Highway 54, for Cedar Creek bridge; Laclede County—2 mi., Highway 12, Barton County line east; 4 mi., Highway 12, Greenfield to Everton; 5 mi. supplementary, Lockwood north; Lawrence County—10.7 mi., Highway 38, Jasper County line to Hobart; Vernon County—5.5 mi. supplementary highway, Mile east; 6 mi. supplementary highway, Walker to Harwood.

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, opens bids Sept. 26 for 75 roads and 34 bridges: Atchison County—2,852 mi. 24-ft. graded earth, Route 1 west of Watson, 31,853 cu. yd. excavation, 57,930 lb. struc. steel, 2 I-beam bridges SA-1; 4,353 mi. 24-ft. graded earth, Route 1 west of Watson, 9005 cu. yd. excavation SA-2; Buchanan County—4,585 mi. 14-ft. crushed stone, Route 36-Clarksdale, 11,403 cu. yd. excavation, I-beam bridge over branch SP-1; 2,410 mi. 20-ft. conc., St. Joseph Belt Line, 70,680 cu. yd. excavation, 71AP-20; 2,596 mi. 20-ft. conc., St. Joseph Belt Line, 84,218 cu. yd. excavation, deck girder bridge, 71AP-30; Livingston County—4,486 mi. 16-ft. gravel, Chillicothe-Spring Hill, 8,425 cu. yd. excavation, SA-1; Schuyler County—4,563 mi. 16-ft. gravel, Downing south, 26,934 cu. yd. excavation, 39,000 lb. struc. steel, I-beam bridge over creek SA-1; Lewis County—2,652 mi. 24-ft. graded earth, Labelle south, 10,543 cu. yd. excavation, 10,020 lb. struc. steel, I-beam bridge over creek, SD-1.

In Monroe County—3,346, 2,095, 3,175 mi. 24-ft. graded earth, Santa Fe-Ralls County, 14,750 cu. yd. excavation, bridge over branch, SD-3, SM-1 and SM-2; Ralls County—2,384 mi. 16-ft. gravel, 6,723 cu. yd. excavation, 41,250 lb. struc. steel, I-beam bridge over creek, SD-1; Benton County—3,239 mi. 18-ft. gravel, Cole-Camp-Morgan County, 52-34A; Cass County—3,267 mi. 12-ft. chats, Archie to Main City, 7508 cu. yd. excavation, SA-2; Henry County—4,195 mi. 12-ft. chats Clinton east, 6329 cu. yd. excavation, SA-1; 2,491 mi. 12-ft. chats, Clinton west, 42,817 cu. yd. excavation, 175,630 lb. struc. steel, 4 I-beam bridges, SE-1; Jackson County—1,849 mi. 36-ft. conc., through Independence, 139,430 cu. yd. excavation, 24-2; slab bridge over creek, 40-6B; 3,327 mi. 20-ft. conc., Cockrell-Johnson County, 26,099 cu. yd. excavation, 18A; 3,654 mi. 20-ft. conc., Cockrell-Johnson County, 51,424 cu. yd. excavation, 18B.

In Pettis County—4,801, 4,617 mi. 18-ft. gravel or crushed stone, Silicia-Route 61, 52-29A and 52-30A; 3,557 mi. 20-ft. conc., Sedalia east, 7209 cu. yd. excavation, 50-19; 1,650 mi. 20 and 30-ft. conc., through Sedalia, 12,185 cu. yd. excavation, bridge, 65-52; 2,538, 2,986 mi. 12-ft. gravel, Lamonte-Green Ridge, 11,892 cu. yd. excavation, SA-2 and SA-3; Platte County—2,858, 3,740 mi. 9-ft. gravel, East Leavenworth-Platte City, 92-1B and 92-2A; Miller County—2,691 mi. 30-ft. graded earth, Damsite to Zebra, 101,702 cu. yd. excavation; Camden County—2,281, 4,406, 3,967,

4,007, 3,683 mi. 30-ft. graded earth, first Damsite to Zebra, others Damsite to Roach, 387,343 cu. yd. excavation, 2 bridges over creek, 328B, 328C, 328D, 328E, 328F; Montgomery County—4,015 mi. 16-ft. gravel, Montgomery City-Middletown, 15,568 cu. yd. excavation, bridge over branch, SR-1; Iron County—4,597 mi. 18-ft. gravel, Arcadia to Madison County, 69,607 cu. yd. excavation, bridge over branch, 70-3; 2,485 mi. 16-ft. gravel, Arcadia south, 18,201 cu. yd. excavation, bridge over branch, SE-1.

In Jefferson County—3,037, 2,932 mi. 16-ft. gravel or crushed stone, Silicia-Route 61, SZ-1 and SZ-2; St. Louis County—3,200, 2,791 mi. 36 and 56-ft. graded earth, Vandover road-Denny road, 216,982 cu. yd. excavation, 66TR-10, 66TR-13; Barry County—3,48, 3,488 mi. gravel, Purdy west, SB-1 and SB-2; Bates County—4,712 mi. 18-ft. chat, west of Butler, 49,91 cu. yd. excavation, 2 bridges, 52-3; Cedar County—3,466 mi. 18-ft. gravel, Stockton south, 23,078 cu. yd. excavation, 39-4; Lawrence County—3,590 mi. 16-ft. chat, Newton County line-Monett, 13,489 cu. yd. excavation, SA-5, 39-4; Vernon County—0,345 mi. 20-ft. conc., Nevada south, 51,358 cu. yd. excavation, deck girder bridge over railroad, 71-80-A; Dallas County—1,980 mi. 18-ft. gravel, Spur to Goss School, 11,779 cu. yd. excavation, 65-83; Greene County—4,943 mi. 16-ft. crushed stone, Route 12-Walnut Grove, 30,792 cu. yd. excavation, SA-1; Laclede County—3,44, 2,590 mi. 18-ft. gravel, Labanon south, 47,981 cu. yd. excavation, bridge over branch, 5-75 and 5-76.

Douglas County—4,410, 4,228 mi. 16-ft. gravel, Ava east, 14-24A and 14-25A; Howell County—4,188 mi. 24-ft. graded earth, Route 63-Siloam Springs, 13,214 cu. yd. excavation, SB-3; Oregon County—4,434 mi. 24-ft. graded earth, Route 63-Crouch, 19,884 cu. yd. excavation, SA-1; Ozark County—5,000 mi. 24-ft. graded earth, Caulfield-Arkansas line, 21,296 cu. yd. excavation, bridge over dry run, SM-1; Shannon County—3,718 mi. 18-ft. gravel, Birch Tree-Bartlett, 47,615 cu. yd. excavation, 4 bridges over dry wash, 60-58; Texas County—4,907, 5,000 mi. 16-ft. gravel, Roby-Houston, 2801 cu. yd. excavation, 17-2A and 17-28A; 1,667 mi. 30-ft. graded earth, Licking east, 20,483 cu. yd. excavation, 32-1; Bollinger County—2,708 mi. 12-ft. gravel, Stoddard County-Bute 51, 34,840 cu. yd. excavation, SC-2; Stoddard County—2,872 mi. 12-ft. gravel, Advance west, 26,110 cu. yd. excavation, I-beam bridge over drainage ditch, SC-1; Dunklin County—0,542 mi. 9-ft. conc. and 9-ft. gravel, through Malden, 2263 cu. yd. excavation, 82-1.

In New Madrid County—2,072 mi. 9-ft. conc. and 9-ft. gravel, 2975 cu. yd. excavation, 82-2A; Dunklin County—3,929 mi. 18-ft. gravel, Campbell to Arkansas Line, 61,873 cu. yd. excavation, bridge over creek, 93AP-1; Mississippi County—1,882 mi. 9-ft. conc. and 9-ft. gravel, Route 105 to Refund 1, 15,021 cu. yd. excavation, Ref. 6; 1,338 mi. 24-ft. graded earth, Refund 2 to Scott County, 6435 cu. yd. excavation, Ref. 7; 1,338 mi. 12-ft. gravel Refund 2 to Scott County, SN-1; Scott County—3,536 mi. 12-ft. gravel, Route 55 to Route SN, 9883 cu. yd. excavation, I-beam bridge over drainage ditch, SD-1; 1,757 mi. 12-ft. gravel, Commerce south, SN-4; Ripley County—3,130, 2,439 mi. 12-ft. gravel, Doniphan-Oxly, 14,778 cu. yd. excavation, bridge over creek, SB-1 and SB-2; Stoddard County—4,347 mi. 12-ft. gravel, Hunterville south, 2,250 cu. yd. excavation, SA-1; Wayne County—3,270 mi. 24-ft. graded earth, Carter County—Waynesboro, 23,621 cu. yd. excavation, bridge over branch.

Mo., Boonville—City plans 30-ft., 6 in. paving, Fourth St.

Mo., Rolla—City, E. D. Williams, Clk., has low bid from Hy Prosperpi, 1220 N. Campbell St., Springfield, for 2650 sq. yd. plain conc. paving; Russell & Axon, Engr., 6200 Easton Ave., St. Louis.

North Carolina—State Highway Comsn., John D. Waldrop, Engr., Raleigh, opens bids Sept. 30 for 8 roads and bridge: Jones County—4.89 mi. sand asphalt, Route 121, from Lenoir County line, No. 22481; Lenoir County—14.75 mi. 18-in. sand asphalt, Route 121, Kinston to Jones County, No. 2520; New Hanover County—bridge over Smith Creek, Wilmington, together with structure to Prince George Creek and grading at Northeast River bridge, No. 358; Alamance County—835 mi. widening conc., Route 10, New River to Trollingwood, No. 5091; Moore County—12.5 mi. grading, Route 74, Montgomery County line to intersection with Route 902, No. 5752; Rowan County—2.1 mi. widening, Route 10 to 20 ft., Spencer to Yadkin River bridge, No. 6730; Union County—2.40 mi. widening, Route 20 east and west of Monroe, No. 6920; Gaston County—3.9 mi. reconstructing penetration macad., Route 373, Mt. Holly to Belmont, No. 6335; Stanly County—7 mi. grading, Route 74, Albemarle to Yadkin River, No. 6830.

N. C., Charlotte—Mecklenburg County Highway Comsn., Lloyd Ross, Engr., plans widening Beattie Ford road from 6 to 7 ft.

from new city limits to five-mile post, 1 1/4 mi., including making road double track with rock base; probably later treat road with asphalt.

N. C., Fort Bragg—Capt. Lawrence L. Simpson, Constructing Quartermaster, rejected all bids for paving various streets, sidewalks, curb and gutter; will call for revised bids. 9-4

Okl., Oklahoma City—City, E. M. Fry, Mgr., plans starting work promptly on street improvements, etc.: Lowering grade, Harvey Ave., \$17,500; lowering grade, Exchange Ave., and repaving improved section, \$11,000; bridge, Oliver Park, \$1400; water line in same playground \$800; boat dock, Lincoln Park, \$800; water lines and bridges, \$10,500; grading Edgemere Park, \$2000; gravel drives, Fair Park, \$8000, and small projects throughout playground system.

Tenn., Chattanooga—Hamilton County Comms., T. S. Wilcox, Chmn., has low bid from Gridley Construction Co., 500 W. 33rd St., at \$41,295, for building highway to be known as Ochs Blvd., up Lookout Mountain. 8-28

Tenn., Memphis—City, D. C. Miller, Clk., plans improving Camilla St. beside Veteran's Hospital.

Tex., Houston—City, S. A. Starkey, Street and Bridge Commr., gravel, drain, Taylor St., White Oak Bayou to Shearn and Crockett.

Tex., Houston—City Council approved plans for paving Chenevert St., Texas to McKinney Ave., to width of 52 ft., and instructed Fred Turner, City Secy., to call for bids; S. A. Starkey, Street and Bridge Commr.

Tex., Liberty—Liberty County Clk. opens bids Sept. 24 for 8.2 mi. conc. paving, Kaywood-Hull Road County project, including following approx. quantities: 8600 sq. yd. paving, 271,000 lb. rein. steel, 86,000 sq. yd. subgrade, 22,538 cu. yd. excavation; C. R. Wilson, County Judge.

Tex., Marlin—Falls County plans expending \$45,000 in Wilson Road Dist. See Financial News Columns.

Tex., San Antonio—Bexar County Highway Dept. opens bids Oct. 3 for 1.9 grading, surfacing, St. Cloud road, Main and Sunshine drives, County Comms. Precinct No. 2; soon receive bids for same kind of work on 2.26 mi., Woodlawn Dr., connecting Lake Dr. with Callaghan road.

Tex., Sinton—San Patricio County Comms. Court receiving bids for grading, draining, Odem to west line of Road Dist. No. 5.

Virginia—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, opens bids Sept. 30 for 2 roads: King and Queen County—6 mi. grading, draining, Route 29, Adner to Shackle Forks, Proj. F-349C, 38,984 cu. yd. excavation, 3853 lb. rein. steel; Henrico County—1.2 mi. bit. macad. or conc., 0.2 mi. north of Broo Run to Inter. Brook road, Proj. F375BC, 6,974 cu. yd. excavation, 11,000 sq. yd. bit. top, or 10,626 sq. yd. conc.

Contracts Awarded

Ark., Little Rock—City, Bd. of Public Affairs, let contract to P. F. Connelly Paving Co., Home Insurance Bldg., for paving portion of streets in Fair Park. 9-4

D. C., Washington—Engineering Div., U. S. Public Buildings and Public Parks, Maj. D. H. Gillette, Chief, let contract to William Meyer, Philadelphia Ave. and Fifth St., Baltimore, Md., at \$29,000, for 10,000 ft. draining and sub-grading roads, Sec. III, Rock Creek and Potomac Parkway between P St. and Massachusetts Ave.

D. C., Washington—Dist. Comms. let contract to Corson & Gruman Co., Inc., 33rd and Ct., N. W., at \$34,230, for bit. surfacing various macad. streets and roads, and at \$7180, for bit. treating various gravel roads and streets.

Florida—State Road Dept., Tallahassee, B. M. Duncan, Engr., let contract to R. G. Lassiter & Co., American Bank Bld., Greensboro, N. C., at \$300,786, for 19.2 mi. rock base paving, Highway 78.

Florida—State Road Dept., B. M. Duncan, Engr., Tallahassee, let contracts for 11 roads: Jefferson County—between Monticello and Capps, Proj. 720, Duval Engineering & Contracting Co., Dyal Upchurch Bldg., Jacksonville, \$174,504; Brevard County—between Indian River City and Orange County line, Project 770, Standard Asphalt Co., Winter Park, \$49,915; Levy County—between Bronson and Ellzey, Proj. 677B, Langston Construction Co., Tallahassee; Duval-St. John Counties—19.2 mi., between proj. 876-A and St. Augustine, Proj. 876-C, A. G. Lassiter & Co., Barnett Bldg., Jacksonville, \$300,786; Palm Beach County—between Lake Worth and point 2 mi. south, Proj. 915, E. F. Powers Construction Co., Harvey Bldg., West Palm Beach, \$28,471; Brevard County—

Proj. 608-Ba, to end of pavement, Eau Gallie, J. D. F. Baggs, Sarasota, \$32,758; Glades County—Kissimmee to Indian Prairie Canal, Project 809, Reed W. Bryan Co., Auburndale, \$117,012; Bradford County—Brooker to Hampton, Proj. 911, oil asphalt, Pan-American Petroleum Co., \$979; slag, Birmingham Slag Co., Comer Bldg., Birmingham, Ala.; \$3141; crushed rock, Standard Rock Co., Morristown, \$3603; crushed gravel, Roquemore Gravel Co., 300 S. Seventh St., S. W., Birmingham, \$3095; Alachua County—Gainesville to Dyasville, broken stone base, Proj. 741, L. M. Gray, Gainesville, \$10,855; Okaloosa County—Walton County line to Niceville, asphalt, Proj. 802-A, Shell Petroleum Corp., Lynch Bldg., Jacksonville, \$21,160; Bradford County—Starke to Raiford, pipe and coupling, Proj. 801, Southern Metal Culvert Co., Stuart, \$20,250.

Kentucky—State Highway Dept., H. D. Palmore, Engr., Frankfort, let contracts for 2 roads: Bath-Montgomery Counties—12.94 mi. grading, draining, surfacing, rock asphalt on local limestone base, Thomas Ruth & Co., Frankfort, \$381,626; Perry-Leslie Counties—18.599 mi. surfacing, trafficbound sandstone, limestone top, Campbell-Johnson Co., Pikeville, \$175,164. 7-24

Ky., Louisville—Dept. of Public Works, C. B. Matthews, let contracts for improving 23 streets, asphalt, conc., rock asphalt and concrete: Henry Bickel Co., Inc., 435 Garden St., \$52,000; Louisville Asphalt Co., Floyd and Lee St., \$37,000; Andrews-Collings Asphalt Co., 1350 S. 13th St., \$17,000; Geo. M. Eady Co., 340 Byrne St., \$27,000, and F. G. Breslin, 32nd and Market St., \$30,000. 8-28

La., Ville Platte—City Council let contract to Barber Bros. Construction Co., Bogalusa, for Portland cement conc. paving, Main St., at \$14,748; M. J. Godeau, Jr., Engr., Opelousas. 8-14

Maryland—State Roads Comsn., L. H. Steuart, Secy., Baltimore, let 2 road contracts and 2 bridge contracts: Kent-Queen Anne's Counties—electrical work on new Chester River bridge, Electro Mechanical Co., 432 N. Calvert St., \$7747; Kent County—2.14 mi. conc., Morgue toward Chesterville, Old Line Construction Co., Chestertown, \$26,436; Anne Arundel County—2 mi. gravel, Mayo road toward Muddy Creek, E. Ray James, Havre de Grace, \$18,717. 9-4

Md., Fort George Meade—Constructing Quartermaster let contract to Henry L. Maas & Sons, Inc., 1119 Ensor St., Baltimore, at \$34,800, for building and completing main roads, service roads and sidewalks. 8-14

Md., Tokoma Park—Town, Ben G. Davis, Mayor, let contract to F. C. Taylor Co. for cement sidewalks, at \$185 per sq. ft., and at \$1.50 per cu. ft. for excavating.

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, let contract to Gaines Bros. Co., Fairland, Okla., for 3,531 mi., 16-ft. gravel, Project SA-1, Maries County. 8-14

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, let contracts for 3 roads and rejected bids for 5 roads, work by state forces: Linn County—3,750 mi., 16-in. gravel, Harry Tidd, Hutchinson, Kans.; New Madrid County—2,655, 2,481 mi., 12-in. gravel, Lahar Bros., Boonville; rejected bids: Pulaski County—2,937 mi., 16-ft. gravel; Audrain County—2,003, 3,227 mi., 24-ft. graded earth; Randolph County—2,516, 3,617 mi., 24-ft. graded earth. 9-11

Mo., Cape Girardeau—City Council let contract to F. W. Keller for paving Bellevue St. and building sidewalk along north line of street. 9-4

Mo., Fredericktown—City let contract to Tidd & Cole, Saxton, at \$28,060, for paving S. Main St., 9040 yd. 6-in. and 9-in. rein. conc. paving and 7066 ft. curb and gutter.

Mo., Jefferson City—City, Bd. of Aldermen, E. L. Bruns, City Clk., let contracts to following totaling \$21,681, for street improvements: Webb-Boone Paving Co., 5103 Fyler Ave.; Edward Fehlig & Co., Inc., 14 S. Central Ave., Clayton.

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., let paving contracts totaling \$40,418 to following: Chase Construction Co., 5230 Devonshire St.; Ansbore & Maguire, 706 Chestnut St.; Perkinson Bros. Construction Co., 3237 Carter Ave.; Eyerma Construction Co., 1210 S. Grand Blvd.

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., let contracts to following for sidewalks: Bridges Asphalt Paving Co., 1470 Kentucky St.; J. C. Reed and J. W. Mullins, 8246 Monroe Ave., St. Louis County, St. Louis.

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., let contracts for paving: Nashville Ave., Webb-Boone Paving

Co., 5103 Fyler Ave.; Labadie Ave., M. L. Flinn Paving Co., 1405 S. First St., \$26,789; Tholoan Ave., Central Paving & Construction Co., 417 N. Seventh St., \$34,453; Tholoan Ave., Central Paving & Construction Co., \$7419; Palm St., Central Paving & Construction Co., \$20,330; Humphrey St., Central Paving & Construction Co., \$22,979; Kraft St., Perkinson Bros. Construction Co., 3237 Carter Ave., \$11,841; Gimblin St., Stiers Bros. Construction Co., Garrison and Magazine St., \$19,625; 13th St., Eyerma Construction Co., 1210 S. Grand Blvd., \$13,941; Papin St., Eyerma Construction Co., \$3576; Limit Ave., Wm. A. Riley Construction Co., Title Guaranty Bldg., \$4854.

N. C., Greensboro—Greensboro-Gullford County Comms. let contract to R. G. Lassiter & Co., American Bank Bldg., for resurfacing about 15 mi. roads at \$33,422.

Okl., Oklahoma City—City, M. Peshek, Jr., Clk., let contract to Western Paving Co., Petroleum Bldg., for 7-in. conc. paving, 23rd St.; Geo. F. Brown, City Engr.

Tenn., Johnson City—City, W. B. Ellison, Mayor, let contract to Southeastern Paving & Construction Co. for resurfacing N. Roan St., at about \$13,554, and at about \$24,309 for resurfacing N. Roan St.; also let contract, totaling \$22,733, to same firm for grading, paving Belmont St., Eighth Ave., Oak St. and Broadway.

Tex., Beaumont—City Council probably let contract to Scott Shambaugh Co. for rein. conc. paving Milam St., at about \$22,000.

Tex., Dallas—Dallas County Comms. Court let contract to J. Lee Bilbig, W. Dallas St., and E. A. Vilbig, 3905 Elm St., at \$16,819 for bitulithic paving; A. P. Rollins, Engr.; to J. Lee and E. A. Vilbig at \$181,893 for grading, draining Outer Blvd.

Tex., Houston—B. F. Panas & Co., Esperanza Bldg., has contract at \$27,016 for grading, draining La Porte road, approx. 8 mi.

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported

Ala., Decatur—Hornbuckle Contracting Co., Standard Bldg., Atlanta, Ga., reported, low bidder for sanitary sewers.

Ark., Harrison—Dickinson & White, Engrs., Rector Bldg., Little Rock, advises city has had a preliminary report for sewers, no definite steps taken toward financing or contracting. 9-11

D. C., Washington—Following contracts let for sewer work: Stormwater sewers in Kalmia St., N. W., between W. Beach Drive and Sixteenth St., and in Myrtle St., between Kalmia and Sixteenth, at \$41,181, and Twenty-second St. service sewer between Bunker Hill Rd. and Eastern Ave., N. E., at \$3866, to Peter D'Adamo Construction Co., Marine Bank Bldg., Baltimore, Md.; storm water sewer Chevy Chase Parkway between Northampton and Patterson Sts., at \$3827, to W. A. Pate, Jr., 1048 Twenty-ninth St., N. W.; replacement sewers in vicinity of Sixth and K Sts., N. E., at \$9922, to M. Cain Co., Inc., 13 Sixth St., N. W.

Fla., Miami—City, C. S. Nicholls, Engr., take bids Sept. 29 for 530 ft. vit. or conc. sewer E. of S. W. 22nd Ave., on S. W. 6th Terrace.

Ga., Atlanta—Whitman, Requardt & Smith, Baltimore Trust Bldg., Baltimore, Md., completing sewer survey of Atlanta and surrounding territory. 8-21

Ga., Hogsansville—See Roads, Streets, Paving.

Ky., Louisville—Comms. Sewerage granted permission to Pittsburgh Foundation Co., Keystone Bldg., Pittsburgh, Pa., contractors for Southwestern Outfall sewer to sub-let contract for 10,220,000 lbs. of rein. steel. 7-10

Md., Baltimore—Bd. of Awards let Storm Water Cont. 140 at \$16,838 to Morocco Construction Co., 1231 S. Exeter St.; low bid on Sanitary Cont. 265 from D. Cellinese at \$33,016.

Md., Catonsville, Baltimore—Baltimore County Metropolitan District Comms., Towson, receive bids September 29 for furnishing and laying vit. pipe sewer and excavating trenches in West Catonsville. See Want Section—Bids Asked.

Mo., Kansas City—Sub Committee on Sewers of Civic Improvement Committee, R. E. McDonnell, Chmn., recommended bond issue

for 5 sewer projects, cost \$6,000,000; projects recommended are: Combined storm and sanitary Town Fork sewer from 50th St. and Cleveland Ave. southwest to 63rd St. and the Pasco; straightening Brush Creek and paving bed and banks; sewage disposal plant at mouth of Blue River sewer, for treating sewage before it is emptied into Blue River; sewage pumping plant for Prospect Ave. sewer at Missouri River.

Mo., Sullivan—City, F. H. Sullivan, Mayor, reported, plans sewer disposal plant; cost \$25,000; may vote on bonds; W. A. Fuller Co., Engr., 2016 Shenandoah Ave., St. Louis.

N. C., Greensboro—City, I. C. Brower, City Mgr., reported, let contract to Murray Const. Co., 508 Union Ave., Knoxville, Tenn., for sewer contract No. 22.

Okla., Chickasaw—City, Jess L. Larson, Mayor, plans extending storm and sanitary sewer systems; Robert O. Bradley & Co., Const. Engrs.

S. C., Spartanburg—Fiske-Carter Construction Co., 121½ W. Main St., has contract at \$256,319 for Fair Forest Creek and Lawson's Fork intercepting sewers; McClelland Co., Latta Arcade, Charlotte, N. C., at \$276,011 for Fair Forest Creek disposal plants and at \$56,000 for Lawson Creek disposal plant.

Tenn., Memphis—City, D. C. Miller, Clk., plans \$35,000 sanitary plant to provide sewage disposal in newly annexed territory.

Tex., Goose Creek—City, R. M. Manley, City Clk., employed Municipal Engineering Co., Athletic Bldg., Dallas, to prepare plans and specifications for modern sewage disposal plant of Imhoff principle for population of 8000; bids will probably be called for latter part of Sept.

Tex., Houston—City, Fred W. Turner, City Sec., will call for bids for Elliot School sewer, cost \$10,000; American Cast Iron Pipe Co., Public Natl. Bank Bldg., has contract for c. i. pipe for water mains on Heiner, Jefferson and Bagby Sts.; Dedman Foundry & Machine Co., foot of Buffalo St., for fittings; Ricker Construction Co., 7909 Braozs St., will lay mains.

Tex., Houston—Wm. A. Brunet, 3211 Crawford St., has contract for sanitary and storm sewers on Crawford St. and storm sewers on Dunlavy St.; Jeffrey Mfg. Co., Columbus, Ohio, low bidder at \$21,000 for conveyor system at disposal plant.

Tex., Jacksonville—City constructing sewer and water extensions, Waco and El Paso Sts.

Tex., Port Arthur—Central Contracting Co., Athletic Bldg., Dallas, reported, has contract at \$140,000 for Stillwell Blvd. storm sewer.

Telephone Systems

Fla., Cocoa—Southern Bell Telephone & Telegraph Co., Atlanta, Ga., reported, acquired Brevard County Telephone Co.

Fla., Orlando—Marion Carter Greer, applied to Federal Radio Comsn., Washington, for permission to construct broadcasting station.

Ga., Atlanta—Barge-Thompson Co., 136 Ellis St., N. E., reported, has contract for Raymond dial office building Cor. Holder-ness and Gordon Sts., S. W., for Southern Bell Telephone & Telegraph Co., Hurt Bldg.; cost \$60,000; 2 story, rein. conc.; brick and tile walls; tar and gravel roof; cement and tile floor; steam heating; steel sash and doors; plans by Marye, Alger & Vinour, Architects, Walton Bldg.; contractors ready for sub bids.

Miss., Gulfport—Western Union Telegraph Co., 195 Broadway, New York, reported, plans rebuilding entire line of company from New Orleans to Mobile; cost about \$365,000; work to begin at Gulfport.

Mo., Greenville—North Central Telephone Co., Kansas City, reported, acquired Inland Telephone Co., having properties in Wayne county, including Williamsville, Greenville, Piedmont and Taskee.

Mo., Kansas City—Southwestern Bell Telephone Co., opens bids Sept. 16 for Benton-Chestnut Exchange, Twelfth & Cleveland Aves.; brick, steel and rein. conc.; 2 story and basement; fireproof; I. R. Timlin, Archt., 1916 Telephone Bldg., St. Louis.

Mo., Parma—Herschel W. Ward, applied to Federal Radio Comsn., Washington, for permission to erect broadcasting station.

Mo., Robertson—KGTR, Aeronautical Radio, Inc., applied to Federal Radio Comsn., Washington, for permission to construct aeronautical station.

Mo., Springfield—KGTQ, Aeronautical Radio, Inc., applied to Federal Radio Comsn., Washington, for permission to construct point-to-point station.

N. C., Charlotte—C. S. Andrews applied to Federal Radio Comsn., Washington, for permission to construct 1000 watt broadcasting station.

Okla., Waynoka—Standard Telephone Co., J. M. Keffer, Dist. Mgr., reported, plans \$12,000 telephone exchange.

Okla., Waynoka—Standard Telephone Co., care J. M. Keffer, Dist. Mgr., reported, plans 1 story, 67x45 ft. telephone building, cost \$12,000.

Textile Mills

Ala., Anniston—Acme Weaving Mills, Inc., W. E. Bullard, Pres. and Gen. Mgr., 1400 Moore St., let contract to Ogletree Construction Co., 11th St., Anniston, Ala., for \$75,000 addition to plant for weaving fine tapes; fireproof, 1-story, sawtooth type, 6500 ft. floor space providing for 60 additional machines; Klepsig Plumbing & Heating Co., 26 W. 10th St., Anniston, have plumbing and fixture contract; Weir Electric Co., 1210 Noble St., wiring contract.

Ga., Griffin—Georgia-Kincaid Mills contracted with Bahnsen Co., Reynolds Bldg., Winston-Salem, N. C. for additional humidifiers in winder and warper rooms.

S. C., Taylors—Bd. of Directors, Rockland Finishing Co., Inc., Garnersville, N. Y., consummated arrangements for sale of good will and greater part of machinery and supplies to Piedmont Print Works for use of that corporation and Southern Bleachery, Inc.; shipment of equipment to be started at once. 9-11

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification

Fla., Pinellas Park—Pinellas Water Co., subsidiary of Layne Southeastern Co., 742 Twenty-ninth Ave., St. Petersburg, reported, considering installation soft water system.

Ga., Macon—United States Pipe & Foundry Co., Birmingham, Ala., reported, has contract for centrifugal pipe, cost \$28,683, for high pressure main from pumping station on Young St.

Ga., Macon—Bd. of Water Comms. advises pipe has been purchased and other material arranged for high service main from Young's Rd.

Ga., Madison—W. A. Kinney, Lithonia, reported, has contract for city filter plant, reservoir, etc.

Ky., Owingsville—City Council meets Sept. 20 to consider plans for water system; Green's Engineering Co., Engrs., Paducah; construction to begin soon.

La., Kenner—Bd. of Water Comms., East Jefferson Water Dist. No. 1, Charles A. Boutall, Sec., Jefferson Bk. Bldg., receives bids Oct. 15 for A—3,000,000-gal. rein. conc. covered reservoir; B—constructing 6,000,000 gal. per day filter plant, head house, and pumping plant buildings; C—grit and mixing chambers and coagulation basin; plans from above or Henry A. Mentz & Co., Const. Engrs., Citizens Natl. Bk. Bldg., Hammond, La.

La., West Monroe—Layne Louisiana Co., 1005 Desiard St., Monroe, reported, has contract for water well in Major McGuire Park.

Md., Baltimore—Following contractors estimating on construction of Prettyboy Dam, bids opened Sept. 24:

Whiting-Turner Construction Co., Stewart Bldg., Merritt, Chapman, Scott Corp., Fidelity Bldg., Ligon & Ligon, 3310 Ridgewood Ave., P. C. Street Engrg. Co., 404 St. Paul St., Christhill & Ensey, 1623 Ridgely St., Consolidated Engineering Co., 20 E. Franklin St., Frank Carozza & Son, 6002 Holabird Ave., Sanford & Brooks Co., South and Water Sts., Mullan Contracting Co., 3945 Greenmount Ave., Dietrich Bros., 200 Pleasant St., D. C. Elphinstone, Inc., 120 S. Calvert St., Concrete Steel Co., Lexington Bldg., Continental Contracting Co., 2508 N. Charles St., Raymond Concrete Pipe Co., Munsey Bldg., The David M. Andrew Co., Sisson and Twenty-sixth Sts., all Baltimore; Gannett, Seelye & Fleming, Box 366, Harrisburg, Pa.; Also John F. Casey Co., Aspinall St., Pittsburgh, Pa.; Munroe & Westcott, North Attleboro, Mass.; Spencer, White & Prentiss Co., Tower Bldg., Washington, D. C.; Harry T. Campbell Sons Co., Towson; McNicholas Paving & Contg. Co., 20th and Sedgely St., Stange Construction Co., 1600 Arch St., Seeds & Derham, 25 Maplewood St., all of Philadelphia, Pa.; The L. E. Myers Const. Co., Inc., 84 William St., Parker, Graham, Inc., 50 Church St., J. F. Murphy Const. Co., Inc., 1860 Broadway, MacDonald Spencer Engr. Co., 420 Lexington Ave., Interstate Equipment Corp., 25 Church St., Bates & Rogers Constr. Co., 75 West St., all of New York City.

Also S. J. Groves & Sons Co., Ridgefield, N. J.; S. Morgan Smith Co., York, Pa.; W. H. Gahagan, Inc., 147 Remsen St., Brooklyn, N. Y.; Indiana Limestone Co., Bedford, Ind.; Rinehart & Dennis Co., Inc., Charlottesville, Va.; Wiley-Maxon Const. Co., Columbia, Pa.; B. C. Coon Const. Co., Luzerne, Pa.; Hardie, Tynes Mfg. Co., 800 N. 28th St., Birmingham, Ala.; Hardaway Contracting Co., Georgia Home Bldg., Columbus, Ga.; Fidelity & Deposit Co. (for W. F. Callahan Construction Co.), Arcade Bldg., St. Louis, Dempster Construction Co., Springdale Ave., Mo.; J. A. Laporte Corp., Albany, N. Y.; Knoxville, Tenn.; J. E. Baker Co., York, Pa.; the Prettyboy project includes following:

1—stream control; 2—clearing and grubbing; 3—common excavation, 25,000 cu. yds.; 4—rock excavation, 44,000 cu. yds.; 5—trench excavation, 2000 cu. yds.; 6—concrete, Class A, 2600 cu. yds.; 7—class B, 29,000 cu. yds.; 8—class C, 78,000 cu. yds.; 9—surfacing floors, 1200 ft.; 10—drilling grout holes, 2500 ft.; 11—pipe for grout, 1200 ft.; 12—pressure grouting, 2000 bags; 13—steel reinforcements, 246,000 lbs.; 14—steel contraction plates, 19,000 lbs.; 15—miscellaneous steel, 5800 lbs.; 16—screen, 21,100 lbs.; 17—screen lifter; 18—miscellaneous iron castings, 28,000 lbs.; 19—stop plank guider, 58,000 lbs.; 20—flange special castings, 30,500 tons; 21—B. & S. special castings over 6-in., 24,000 tons; 22—B. & S. pipe and specials, 4-in. and 6-in., 6.50 tons; 23—sluice gates, four 106-ft. head; 24—two sluice gates, 61-ft. head; 25—two sluice gates, 16-ft. head; 26—cut stone, balustrade lump; 27—electric conduits, 2800 ft.; 28—setting conc. and needle valves; 29—fill on arches, 1550 cu. yds.; 30—bituminous road surface, 2050 sq. yds.; 31—corrugated iron pipe, 100 ft.; 32—contraction joint filler, 1500 ft.; 33—gate house superstructure; 34—lighting system; 35—fountain; 36—needle valve enclosures; 37—crane; 38—bronze tablets; 39—engineer's field office; 40—oil heater; Charles Brown Cornell, construction engineer. 9-11

Md., Baltimore—Public Improvement Comsn., disapproved all bids for laying water mains on Frederick Ave. from Martindale Ave. to new city line and on North Ave. from Chester to Gay St.; Charles F. Goob, Ch. Engr., directed to have work done by day labor.

Miss., Rolling Fork—City, Sam Rosenthal, Mayor, receives bids Oct. 7 for 600 ft. of 4-in. water mains and for hydrants.

Mo., Mountain Grove—City voted \$20,000 water works improvement bonds.

North Carolina—See Electric Light and Power.

N. C., Warrenton—H. E. Browder, 126½ S. Salisbury St., Raleigh, has contracted for rein. conc. work for water purification plant; Spoon & Lewis, Const. Engrs., Jefferson Bldg., Greensboro.

Okla., Chickashaw—City, Jess L. Larson, Mayor call election in October on bonds for water works extensions and improvements including 20,000 lin. ft. 18-in. c. i. pipe, 3600 lin. ft. 12-in. c. i. pipe, additional filters, pumps and storage; Robert O. Bradley & Co., Const. Engrs., Chickashaw.

Okla., Duncan—City, W. H. Hollingsworth, Mayor, considering installation of deep well turbine, 250 g. p. m. capacity; date of opening bids indefinite.

Okla., Holdenville—City C. H. Edge, Engr., has plans being prepared for water works extension, including 1800 ft. 16-in. c. i. pipe, new 3,500,000-gal. capacity impounding reservoir on Beemore Creek, small pump station, and remodeling of old filter plant; install two pumps and motors; probably receive bids Nov. 1.

Okla., Oklahoma City—Chamber of Commerce approved \$9,391,286 bond issue and urged immediate steps to call election and begin actual construction work on water works, sewage disposal and sewers; fair park buildings and improvements, etc. See Financial News Columns.

Okla., Oklahoma City—See Roads, Streets, Paving.

Tenn., Lebanon—City receives bids about Nov. 1 for \$200,000 improvements to water system; plans now in progress by Wiedeman and Singleton, Engrs., 1404 Candler Bldg., Atlanta, Ga.; 6½ mi. c. i. pipe, 1½ mi. g. d. filtration plant, new pumping station, steel elevated tank; install filtration equipment, centrifugal pumps and motors.

Tenn., Livingston—Utilities Construction Co., Inc., South Bend, Ind., reported, has contract at \$54,588 for furnishing equipment and placing water works.

Tenn., Memphis—Bd. of Water Comms., reported, let contract to Crane Co., Court & Fourth St., for 16-in. steel well pipe and couplings.

Tenn., Memphis—City, Jas. Sheahan, Gen. Supt. Water Dept., advises have done nothing up to present time in regard to new water system, but expect to have information available shortly. 9-11

Tex., Beaumont—City will have report made on Oct. 1 by S. W. Freese, Engr., Capps Bldg., Fort Worth, for water improvements. 8-21

Tex., El Paso—City, Herman Rosch, Clk., receives bids Sept. 18 for deep well centrifugal pump, etc. See Want Section—Bids Asked.

Tex., Goose Creek—City, R. M. Manley, City Mgr., having plans prepared by M. Griffin O'Neil, Engr. for sewerage disposal plant. 7-31

Tex., Port Arthur—City has plans in preparation by J. B. Converse Engineering Co., 642 Procter St., for central pumping plant, Stilwell & Zwolle Bldgs.; 84x50 ft.; considering erecting two smaller plants.

Tex., Thorndale—City votes Oct. 9 on \$40,000 water works bonds.

Va., Big Stone Gap—City, H. E. Fox, Engr., will expend \$50,000 for water works, preliminary survey made; dam, 30 ft. high, rubble masonry. 9-11

Woodworking Plants

Ark., Pine Bluff—Peers McGlone, reported, let contract to E. C. Royse Construction Co., National Bldg., for 30x180 ft. addition to West Sixth Ave. auto body plant.

Tex., Clarksville—Clarksville Manufacturing Co. organized with capital stock of \$28,500 to take over the vehicle stock and oak flooring plant formerly owned by Gibbons Manufacturing Co.

Va., Altavista—Lockwood Greene Engineers, Inc., 100 E. 42nd St., New York, preparing plans and specifications for 3-story, 100x120-ft. finished goods warehouse for The Lane Co., manufacturers of cedar chests; brick with plank floors and roof, provided with plumbing, heating, electric light and sprinklers; shipping platform and canopy on railroad and enclosed connecting passages with manufacturing plant for transporting finished goods by conveyor for storage; building will replace burned warehouse.

FIRE DAMAGE

Ala., Anniston—D. B. Argo's residence, Fort McClellan Pike.

Ark., Bentonville—Bentonville Ice and Cold Storage Co.'s plant; loss \$60,000.

Ark., England—J. J. Collins' residence; loss \$10,000, including furnishings.

Ark., Helena—Boarding house on Plaza, operated by Mrs. Bill Johnson; Darnell & Polatty's grocery and meat market; loss \$20,000.

Ark., Moten—Arkansas-Haywood Industrial Institute, C. C. Neal, Pres.; loss \$10,000.

Ark., Russellville—Mayor G. C. Nugent's building; Mrs. Ferguson Martin's building; loss \$15,000.

Ark., Searcy—Building owned by T. A. Watkins, occupied by Lewis and Hartsell Dry Goods Store and Forest & Sons Grocery Store; loss \$20,000.

Ga., Thomson—Knox Bldg., housing telephone exchange, motion picture theater and lodge hall; loss \$35,000.

Ga., Thomasville—Irvin Bowers' residence, Green St., near Thomasville.

Ky., Irvine—Building owned by James A. Wallace, occupied by Ford Garage; loss \$40,000.

Ky., Fulton—Usona Hotel, owned by P. C. Ford; loss \$120,000.

Ky., Nicholasville—Jessamine County workhouse; loss \$12,000. Address Bd. of County Commrs.

La., Colfax—Mrs. Retta McKnight's apartment house on Main St.; loss \$10,000.

Md., Cumberland—Building owned by Western Maryland Railway Co., H. R. Pratt Ch. Engr., Baltimore, and occupied by Cumberland Machinery Co., Vanz Construction, Van & Shriver Oil Co. and Tri-State Engineering Co.; loss \$125,000.

Md., Rockville—E. W. Molohan's residence, Norbeck Pike near Rockville.

Mo., Fulton—Callaway Hardware Co.'s store; loss \$35,000; Home Bakery and Cafe, \$11,000; Nolin Pharmacy, \$13,000.

Mo., St. Joseph—Bartlett Bldg., 821 Felix St., occupied by St. Joseph Tobacco Co., Platt-Gard Business University, Byrne Power Plumbing Co. and other firms; loss \$75,000.

N. C., Oxford—Hub Department Store on Main St., owned by Mrs. H. C. Pinnick.

N. C., Rutherfordton—Alonzo Magness' residence, Spindale Highway near Rutherfordton; owned by M. O. Dickerson, Jr.; loss \$7000.

Okla., Picher—Mill at Eleventh Hour Mine; loss \$75,000.

Tex., Brooksmith—J. R. Sowell Mercantile Co.'s store; loss \$15,000.

Ark., Success—State Bank Bldg. and adjoining structure; loss about \$16,000.

Okla., Kremlin—Chas. Johnson's residence, Va., Bedford—L. L. Brown's residence, Turkey Mountain.

W. Va., Martinsburg—Mifflin W. Pyles' residence.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

N. C., Charlotte—Phalanx, Joppa and Excelsior Masonic Lodges plan club bldg. at rear of Masonic Temple, S. Tryon St.

Okla., Oklahoma City—Young Women's Christian Assn., Mrs. W. S. Hanson, member, Bldg. Comm., probably have plans completed during Oct. for \$400,000 to \$500,000 bldg.; brick, stone and rein. conc., 9 stories and basement, 125x120 ft., accommodate 200 permanent and 50 transient guests; Hawk & Parr, Archts., First Natl. Bk. Bldg. 5-1

Tex., Amarillo—Potter County Bd. of Commrs., probably call for bids latter part Oct. or early part Nov. for \$420,000 courthouse; date of bonds bids Oct. 6; fireproof, 8 stories, first 4 floors 80x130 ft., next floor 60x140 ft., 2 upper floors 60x76 ft.; jail on 2 upper floors; Townes, Lightfoot & Funk, Archts., Smith Bldg., Amarillo; Page Bros. Asso. Archts., Austin Natl. Bank Bldg., Austin. 9-11

Bank and Office

Mo., Kansas City—Kansas City Power & Light Co.; \$2,500,000 30-story office bldg., 14th St. and Baltimore Ave.; Holt, Price & Barnes, Archts., 2500 Telephone Bldg., advise no additional contracts let but expect to award several within next 3 or 4 weeks; struct. steel frame contract previously noted; 131x100 ft., 501 ft. high, 41-ft. penthouse surmounted by 87-ft. orna. tower above 30th floor; H. F. Freshman, company archt.; O. R. Bettis, company engr., both 1330 Grand Ave. 5-22

Tex., Dallas—Henri L. Bromberg, Magnolia Bldg., reported, considers erecting office bldg., Jefferson and Beckley Sts., Oak Cliff.

Tex., Tyler—Dr. J. H. Pope, Chmn. of Trustees, Dr. R. L. Page, Dr. L. C. Polk and others promoting erection of Medical Arts Bldg.; E. A. Nolen, Archt., Address Dr. Pope.

Churches

Ala., Decatur—Methodist Church, E. N. Neill, member, erect building.

Ala., Mobile—Central Baptist Church has broken ground for auditorium; plans and constr. by Dr. N. O. Patterson.

Tex., Corpus Christi—Full Gospel Church, Ayres St., plans tabernacle; Rev. J. C. Wilder, 1219 E. Mesquite St., San Antonio. Antonio.

Tex., Corpus Christi—Catholic Church, Rt. Rev. E. V. Ledvina, 804 Antelope St., approved preliminary sketches for Catholic shrine to include church, school, bishop's home, etc.; \$600,000 to \$700,000; start working drawings; C. L. Monnot, Archt., Perrine Bldg., Oklahoma City, Okla.

Tex., San Benito—Methodist Church receives bids Oct. 6 for \$65,000 church and Sunday school annex; Robt. L. Vogler, Archt., Edinburg. 6-26

City and County

La., New Orleans—Following contractors estimating on Touso-Shakespeare Home, bids Oct. 7 by City Dept. of Public Finance, Purchasing Div., Room 24, City Hall: J. A. Petty & Sons, Inc., Audubon Bldg.; Geary-Oakes Co., Q. & C. Bldg.; Geo. J. Glover Co., Inc., Whitney Bldg.; Caldwell Bros., 816 Howard Ave.; O. M. Gwin Construction Co., 3503 Fern St.; Gervais F. Favrot, Balter Bldg.; J. V. & R. T. Burkes, Inc., Amer. Bk. Bldg.; J. A. Haase, Jr., 916 Union St.; Wm. R. Burk, Archt., Balter Bldg. 9-11

Md., Baltimore—Board of Awards, Mayor Wm. F. Broening, plans to install elevator in 5-story Police Headquarters Bldg., Fallsway and Fayette St.

Miss., Oxford—Lafayette County Bd. of Supvrs. receives bids Oct. 7 for bldg. at County Home; plans on file at office Chancery Clerk.

Okla., Oklahoma City—Chamber of Commerce approved \$9,391,286 bond issue to relieve unemployment situation; projects would include among others convention hall, fair park bldgs. and improvements, comfort stations, city detention hospital, fire stations and equipment and municipal repair shop. 7-31

Tenn., Knoxville—City Council has low bid at \$44,870 from A. R. McMurry, Locust St., for detention home, Lonsdale; W. A. Rutherford, Jr., Archt., Kingston Park. 9-4

Tenn., Memphis—Shelby County Comsn., E. W. Hale, Chmn., probably start work within 30 days on additions to workhouse and penal farm, Mullins Station; women's wing, 50-cow dairy barn, chicken ranch; \$200,000; Harker & Cairns, Archts., Court Sq. Bldg.

Tex., Corpus Christi—City, P. G. Lovenskiold, Mayor, erect frame dwelling and other improvements at Lake Lovenskiold; bids Sept. 12.

Tex., Cotulla—LaSalle County Bd. of Commrs., G. A. Welhousen, County Judge, plans courthouse and jail bldg. site present structure; vote Oct. 18 on \$150,000 bonds; brick, tile, rein. conc., marble, stone, 3 stories and basement, with jail above; Henry T. Phelps, Archt., Hicks Bldg., San Antonio.

Tex., San Antonio—Bexar County, Perry W. Robertson, Judge, receives bids Oct. 8 at office W. S. Kendall, County Auditor, for \$25,000 kitchen and dining room, poor farm; brick, tile and conc., 1 story, conc. and wood floors; Phelps & Dewees, Archts., Gunter Bldg. 8-28

Tex., San Benito—City Comsn., L. E. Stanley, City Sec., erect additions to city hall and fire station; bids in.

Dwellings

Ala., Birmingham—W. B. Hobson, 1141 First Ave., South, erect shingle residence, Salisbury Rd. and Rockridge Circle; 1½ stories, steam heat; Chas. H. McCauley, Archt., Jackson Bldg.; bids in.

D. C., Washington—J. N. McCollum, 5425 Connecticut Ave., N. W., erect \$10,000 frame and brick residence, 2944 Brandywine St., N. W.; 2 stories.

D. C., Washington—LaSalle Park Corp. erect dwelling, 4304 Eighteenth St., N. W., after plans by Marcus Hallett.

D. C., Washington—Wm. Beall, Wilkens Bldg.; erect residence, 4525 Forty-ninth St., N. W., after plans by Wm. A. Carr, Mills Bldg.

D. C., Washington—Everett S. Beall, Jr., 1261 New Hampshire Ave., N. W., has permit for 2 brick dwellings, 1340-44 Michigan Ave., N. E.; 2 stories; \$14,000.

D. C., Washington—Beverly P. Evans erect residence, 3229 Military Rd., N. W., after plans by Geo. S. White, 1412 I St., N. W.

Fla., Miami—Bankers Fidelity Investment Co., Realty Bd. Bldg., plans dwelling, Sheridan Ave.

Fla., Miami—M. E. Lybrook alter residence, 2424 N. Bay Rd.

Fla., Miami—Dr. Peyton Hoge, care Peyton H. Hoge, Jr., Starks Bldg., Louisville, Ky., and Miami, erect residence and garage, S. W. 27th Ave.; Wade & Oemler, Archts., Ex. Bldg., Miami; ready for bids; following contractors invited to estimate: Continental Construction Co., Exchange Bldg.; O'Neill-Orr Construction Co., 212 N. E. Fourth St., Sandquist Construction Co., 2692 S. W. 28th Lane John B. Orr, Inc., 147 N. E. Sixth Ave.; R. G. Witters Co., 1745 S. W. Sixth St.; J. C. Gaffney, 708 Collins Ave., Miami Beach.

La., Jefferson Parish—Frank Triolo, 1701 Carondelet St., New Orleans, erect number double cottages, Elmeer subdivision, Jefferson Parish.

Md., Baltimore—S. Page Nelson, Greenspring Ave., plans residence, Bywater Rd., Gibson Island.

Md., Round Bay—Wm. F. Schmick, Sun Bldg., Baltimore and Charles Sts., Baltimore, receives bids Sept. 22 for alterations and additions to residence, Severn River; Palmer & Lambdin, Archts., 613 N. Charles St., Baltimore; following contractors estimating: S. M. Johnson & Bro.; Jos D. Groh, both Pasadena; Edw. A. Cullings, 692 Gladstone Ave., Baltimore; O. C. Macy, Annapolis; Chas. Rochlitz, Arnold.

Miss., Crystal Springs—John Holt plans brick bungalow, Raymond St.

Miss., Vicksburg—Andrew Helgason plans bungalow, Park Addition.

Miss., Vicksburg—Mrs. D. M. Porterfield, 2001 Washington St., plans residence, Markham St.

Mo., St. Louis—J. E. Weissenborn, care Weissenborn Coal Co., Boatmans Bank Bldg., erect residence, Lake Forest.

Mo., St. Louis—Chas. M. Huttig, care St. Louis Lumber Co., 2509 S. Broadway, erect residence, Lake Forest.

Mo., St. Louis—Geo. F. Bergfeld, care Geo. F. Bergfeld Co., Inc., 3832 W. Pine St., erect residence, Lake Forest.

Mo., St. Louis—E. L. Muckerman, 3735 Utah St., erect residence, Lake Forest.

Tex., Brownsville—W. E. McDavitt erect residence; R. Newell Waters, Archt., Westlaco.

Tex., El Paso—Geo. Beaudett, 1620 Myrtle Ave., erect \$16,000 residence, 2018 Kansas St.; brick and stucco, 2 stories, 9 rooms.

Tex., Highlands—Tyrrell & Garth Investment Co. plans 100 dwellings, connect. with development of 1600-acre sub-division.

Tex., Houston—H. Seltzer, 1901 Dennis St., erect 5 duplexes, 2201-19 Wheeler St.; 12 rooms; \$27,500.

Tex., San Antonio—C. W. Hotchkiss, 111 E. Ridgewood St., erect duplex, Ridgewood Court; brick veneer, 10 rooms, 2 stories; Richard Vander Straten, Archt., Travis Bldg.; receiving bids.

Government and State

Fla., Pensacola—Navy Dept., Bureau of Yards and Docks, Washington, D. C., has low bid at \$59,442 from Columbia Contracting Co., 410 Broadway, New York, for boilers, oil burners and flue, Naval Air Station.

Miss., Stoneville—Delta Experiment Station, W. E. Ayres, Director, having plans completed for \$37,500 office and laboratory bldg.; date of bids not set; conc. frame, brick, 4 stories, 42x118 ft., conc. floors and foundation, built-up roof; W. A. Stanton, Archt.-Engr., First Natl. Bank Bldg., Vicksburg. See Want Section—Building Material and Equipment. 6-12

N. C., Fort Bragg—Constructing Quartermaster, Capt. Lawrence L. Simpson, rejected bids for roads, sidewalks and gutters; new bids later. 8-28

Tenn., Jackson—City voted \$75,000 armory bonds; additional \$75,000 to come from State; J. H. Parmelee, Archt., Amer. Tr. Bldg., Nashville. 8-21

Tex., Corsicana—Board of Control, Austin, receives bids until Sept. 22 to remodel hospital bldg., State Orphans' Home; separate bids for plumbing, heating and elect. work; plans from DeWitt & Washburn, Archts., 1228 Kirby Bldg., Dallas.

Tex., Lubbock—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., soon start working drawings for Federal bldg.; fireproof, stone face, 3 stories and basement, 104x87 ft., red tile roof, elevator, heating plant in basement, tile floor and marble wainscot in public lobby; high wood wainscot, plaster beams and cornice and acoustically treated walls in courtroom. 4-17

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, receives bids Sept. 22 for storm sewer system. 8-14

Va., Fortress Monroe—Constructing Quartermaster, Fort Monroe, Capt. Geo. H. Schumacher, receives bids until Oct. 10 for 3 four-family brick and tile apartment houses; information on application.

Va., Quantico—Following contractors estimating on four 3-story barrack bldgs., including plumbing, sewerage, drainage and water systems, heating and steam distributing systems, elect. light and power systems, telephone conduits and conc. and bituminous

paving, Marine Barracks, bids Oct. 1 by Bureau of Yards and Docks, Navy Dept., Washington, D. C.; Ward Co., 1608 Walnut St.; Geo. H. Evans, Inc., 1416 Vine St.; Van Asdlen Construction Co., 1600 Arch St., all Philadelphia, Pa.; Miller Manufacturing Co., 6-7 Station St.; Wise Granite & Construction Co., American Natl. Bank Bldg.; John W. Cowper Co., Inc., State Planters Bk. Bldg., all Richmond, Va.; R. H. Nouligny, Inc., (elect.) P. O. Box 534, Charlotte, N. C.; Boyce Plumbing & Heating Co., Florence, Ala.; W. F. Jackson Co., Inc., Bldrs. Bldg.; Joe B. Martin, P. O. Box 846, both Charlotte, N. C.; Price-Evans Foundry Corp., 1303 Anderson Ave., Chattanooga, Tenn.; Ellington-Miller Co., 25 E. Jackson Blvd.; Hallbauer-LaBahn, Inc., 844 Rush St., both Chicago, Ill.; W. W. Dick (heating), Box 144, Greensboro, N. C.; J. L. Powers, Bennettsville, S. C.; Oettinger Lumber Co., S. Elm St., ext., Greensboro, N. C.; R. K. Stewart & Son, High Point, N. C.; Crane Co., 1225 Eye St., N. W.; A. Dunlop, 2846 27th St., N. W., both Washington; Crescent Steel Co., 120 E. Loughborough Ave., St. Louis. 9-

Hospitals, Sanitariums, Etc.

Ark., Benton—State Construction Comsn., Jos. M. Hill, Fort Smith, Chmn., authorized archts. to proceed with working drawings for farm bldg. units for \$3,250,000 State Hospital for Nervous Diseases, Highway No. 6. Farm units include 4 dormitories housing 100 patients each, dining hall and kitchen, store and recreation bldg., farm employees' dormitory and garage, fire station, mill, dairymen's house, 3 dairy barns accommodating 100 cows each, cattle barn, calf barn, farm garage and repair shop, piggery, cattle hospital, grannery, poultry houses, abattoir and crematory, dipping vats, cottages for supt., herdsmen and florist, greenhouses and central power heating plants; Mann, Wanger & King, Donaghey Bldg., Little Rock, and Sullivan W. Jones, 25 W. 45th St., New York, architects; Lund Engineering Co., Engrs. Home Ins. Bldg., Little Rock; constr. start within 60 days after completion of test well being drilled; brick and concrete, fireproof and semi-fireproof. 8-7

Ga., Atlanta—Home for Incurables Assn. let contract to Pittman Construction Co., 205 Rhodes Bldg., for \$60,000 addition to A. G. Rhodes Memorial; brick and tile, 1 story, 27x100 ft., conc. and tile floors, conc. foundation, slate roof; E. C. Wachendorff, Archt., Standard Bldg. 8-21

Md., Towson, Baltimore—Sheppard & Enoch Pratt Hospital, Alfred W. Straham, Sec., 212 Chamber of Commerce Bldg., receives bids Sept. 19 for nurses' home; brick, 2 wings about 37.6x97 ft., 3 stories and basement; 2 connectink links between wings, 34x25 ft., 1 story and basement; Whitt & Nolting, Archts., Keyser Building, Baltimore; following contractors estimating: Cogswell Construction Co.; Thos. Hicks & Sons, Charles St. and Stratford Road; Tase-Norris Co., 903 Cathedral St.; L. L. Chambers, Inc., 36th and Roland Ave.; Henry Smith & Sons, 115 S. Hanover St.; West Construction Co., Knickerbocker Bldg.; Morrow Bros., Inc., Fidelity Bldg.; M. A. Long Co., 10 W. Chase St.; Chas. L. Stockhausen Co., Marine Bk. Bldg., all Baltimore; Wm. H. Sands, Towson.

Miss., Gulfport—Following firms estimating on sewage disposal plant, U. S. Veterans Hospital, bids Sept. 30 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.; A. Ziegenfelder, Gulfport; Fairbanks, Morse & Co., 115 E. Lombard St., Baltimore, Md.; Ransom & Anderson Co., Inc., 136 Liberty St., New York; Crane Co., 1225 Eye St., N. W.; Washington; Batson-Cook Co., Inc., West Point, Ga.; J. B. McCrary Co., Citizens & Southern Bank Bldg., Atlanta, Ga.; Collins Bros. Contracting Co., Biloxi, Miss. 9-4

Mo., Excelsior Springs—Following firms estimating on officers' duplex quarters, bids Sept. 23 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.; MacDonald Engineering Co., 1 LaSalle St.; Hallbauer-LaBahn, Inc., 844 Rush St., both Chicago, Ill.; Murch Bros. Construction Co., Rwy. Ex. Bldg., St. Louis, Mo.; Samford Bros., Inc., 301 Washington Ave.; Algernon Blair, First Natl. Bank Bldg., both Montgomery, Ala.; Fanning & Sweeney, Inc., Jefferson Bldg., Greensboro, N. C.; C. J. Newlin Co., Normal, Ill.; B. Grunwald, Inc., 1110 Farnham St., Omaha, Neb.; W. P. Thurston Co., Inc., 301 S. Fourth St., Richmond, Va.; H. W. Underhill Construction Co., 235 N. Waco Ave., Wichita, Kans.; Ric-Wil Co. Union Tr. Bldg., Cleveland, O.; A. W. Ferrell, 104 Fifth Ave., Huntington, W. Va.; Luther O. Draper Shade Co., Spiceland, Ind.; Crane Co., 1225 Eye St., N. W.; Washington; Mesker Bros. Iron Co., 424 S. Seventh St.; Johns-Manville Corp., 1705 Locust St., both St. Louis; Ray A. Phelps, Beloit, Wis.; Acme Screen Co., Fort Worth, Tex.; Bethlehem Fabricators, Inc., Bethlehem, Pa.; Royes, Roach & Co., 415 Clinton St., Joliet, Ill. 8-28

N. C., Sanford—Lee County Hospital Bd. of Trustees, J. R. Ingram, Clk., received bids Sept. 16 at Town Hall for \$125,000 hospital, McIver Park; information from Eric G. Flanagan, Archt., Henderson; following contractors estimating: Jewell-Riddle Co., Inc.; V. C. Brown Co., Inc.; W. L. Jewell; J. W. Stout, Inc., all Sanford; C. A. Morrison & Son, Shelby; Geo. W. Kane, Jefferson Bldg., Greensboro; Byrd Bros. & Shaw, Lillington. 9-11

Okla., Guthrie—Methodist Episcopal Hospital, J. L. LaGrone, Sec., may remodel and enlarge bldg.; to raise \$30,000.

Tex., San Antonio—Workmen's Circle, Edw. Treiman, member, passed resolution at Texas-Louisiana Dist. Conference to establish hospital for tubercular and asthmatic patients.

W. Va., Lakin—State Bd. of Control, Charleston, has low bid at \$9592 from West Engineering Co., 926 Sixth Ave., Huntington, for barn, State Hospital for Colored Insane.

Hotels and Apartments

Ga., Macon—Following contractors estimating on \$350,000, 10-story, 50x100 ft., brick, steel and rein. conc., 200-room addition to Hotel Dempsey, bids Sept. 25 at office W. L. Stoddart, Archt., 50 E. 41st St., New York; General-Southern Ferro Concrete Co., Atlanta Trust Co. Bldg., Atlanta; Batson-Cook Construction Co., West Point; Angle-Blackford Construction Co., American Bank Bldg., Greensboro, N. C.; Turner Construction Co., Graybar Bldg.; James Baird Construction Co., 101 Park Ave., both New York; Hunkin-Conkey Construction Co., Hunkin-Conkey Bldg., Cleveland, Ohio; Wark Construction Co., 1608 Walnut St., Philadelphia, Pa.; Consolidated Engineering Co., 20 E. Franklin St., Baltimore; Electrical-Walker Electric Co., Bona Allen Bldg., Atlanta, Ga.; Howard P. Foley, 2020 I St., N. W.; Standard Engineering Co., 2129 I St., N. W., both Washington, D. C. 9-11

Ga., Savannah—The Geiger Hotel, L. C. Hutchinson, Lessee, Burlington, N. C., remodel interior of hotel; painting, decorating, electrical and plumbing fixtures.

Md., Kensington—R. F. Beresford, Archt., 1115 Connecticut Ave., N. W., Washington, D. C., advises that \$3,000,000, 15-story apartment hotel for B. M. Warner, Jr., Tower Bldg., Washington, has been abandoned. 12-5-29

Tenn., Dyersburg—Mrs. A. E. Atwood and Mrs. F. M. Williams, purchased Stevens Hotel; remodel, adding several rooms, redecorate and new furnishings; to be known as Atwood Hotel.

Tex., Beeville—J. J. McKinney has low bid at \$227,000 from Rheiner, Kroeger & Vermersch for 8-story and basement, brick, rein. conc., stone, fireproof, 125-room hotel; Malcolm G. Simons, Archt., Builders Exchange Bldg., San Antonio, and Beeville; W. E. Simpson Co., Engr., Milam Bldg., San Antonio; American Elevator Co., 117 Cedar St., New York, low bid at \$19,994, for elevators. 9-4

Tex., Fort Worth—LeRoy Black has permit for \$13,000 brick apartment, 2733 Purlington St.

Tex., Palestine—Harry E. Weaver, Archt., Esperson Bldg., Houston, advises Dupree Fountain has postponed indefinitely erection of \$250,000 hotel. 7-24

Miscellaneous

Ark., West Memphis—Albert Campbell, Earle, having plans prepared by W. C. Lester, Dermon Bldg., Memphis, Tenn., for tourist camp; plans include 100 cottages, office and storage building, drug store, one story, Spanish type, stucco.

Md., Mount Washington, Baltimore—Methodist Episcopal Home for Aged, Geo. R. Bullen, Chmn., Bldg. Comm., 619 W. Franklin St., ready for bids about Sept. 30 for \$500,000, brick, fireproof building, Rogers and Green Spring Aves.; accommodate 175 people; O. Eugene Adams, Archt., 516 N. Charles St. 5-15

N. C., Salisbury—Potomac Synod of Reformed Church in America, A. L. McCarle, Sec., Frederick, Md., plans \$100,000, 3-story, brick, tile, rein. conc. and steel fireproof Home for Aged; architect not selected.

Tex., Brownsville—Dickinson Farm & Mortgage Co. having plans prepared by R. Newell Waters, Westlaco, for \$40,000 clubhouse on Barreda tract; 2 stories, brick and tile, English Tudor Gothic style; accommodate 100 people.

Schools

Ala., Auburn—Sigma Phi Epsilon Fraternity, C. C. McGraw, Pres., Marvel, Ala., erect \$30,000, 3-story, brick, stone trim fraternity house; Bem Price, Archt., Comer Bldg., Birmingham.

Ark., Hope—School Bd. erect \$125,000 high school on S. Main St. 5-29

Ark., Monticello—Fourth District A. & M. College install heating plant and make other improvements; \$40,000.

Ark., Mountainsburg—Crawford County School Dist., J. P. Bingham, Supt. of Schools, has plans by Haralson & Nelson, Merchants Natl. Bank Bldg., Fort Smith, for 1-story, 7-classroom and auditorium school; postponed \$20,000 bond election until Sept. 20. 9-11

D. C., Washington—Dept. of Interior, John H. Edwards, Asst. Sec., 6117 Interior Bldg., receives bids in duplicate Oct. 7 for (1) furnishing all labor and materials for construction (including all mechanical equipment) of Buildings Nos. 1, 2 and 3 of Women's Dormitory group at Howard University; work includes brick work, stone work, floor and wall tile, misc. iron and steel work, slate and metal roofing, lathing and plastering, carpentry, electric elevators, plumbing, heating, electrical installation, finish grading, conc. walks and landscaping; (2) kitchen equipment, furniture, shades, draperies, etc., furnished and installed; plans from Clerk of Dept.; also from Builders Exchange, Baltimore. 6-26

Fla., Haines City—National Christian Endeavor Assembly, Rev. C. S. Hartridge, Winter Park, soon ready for bids for \$100,000, 1-story, 260x216 ft., rein. conc. auditorium; Arthur Beck, Archt., 18 Autrey Arcade, Orlando. 7-3

Ga., Americus—Anthony School Dist. Bd. of Trustees, W. L. Dupree, Americus, has low bid from E. W. Rowlings, Colquitt, for \$15,000, 1-story, brick and frame school; plans by J. L. Graham, Archt. for State Bd. of Education, Atlanta. 8-14

Ga., Atlanta—Clark University, Henderson's Crossing, Atlanta, having preliminary plans prepared by Architectural Bureau of School for number of buildings; \$200,000, brick, stone trim, comp. roofs.

Ga., Atlanta—Atlanta University, Dr. John Hope, Pres., 643 Hunter St., S. W., soon announce selection of architect for \$450,000, 3-story, rein. conc., struc. steel, brick and tile library; stone trim, marble, tile and terrazzo floors. 6-12

Ga., Albany—Georgia Normal & Agricultural College, H. T. McIntosh, Chmn., has low bid from O. B. Hinds for 1-story and basement, 82x112 ft., brick, stone trim dining hall and 1-story and basement, 203x55 ft. and 44x54 ft., brick veneer practice hall; cast stone trim, comp. roofs; Daniell & Beutell, Archts., Georgia Saving Bank Bldg., Atlanta. 9-11

Ga., Camilla—Camilla Consolidated School Dist., J. D. Whiting, Sec., receives bids Sept. 29 for \$85,000, 1-story and basement, 292x165 ft., brick and tile school; 24 classrooms, auditorium and gymnasium, stone trim, wood floors, steam heat; Lloyd Greer, Archt., S. Patterson St., Valdosta. 8-14

La., Hosston—Caddo Parish School Bd., Shreveport, having plans prepared by Edw. F. Neild, City Bank Bldg., Shreveport, for \$100,000 school.

La., Manham—Richland Parish School Bd., Rayville, receives bids Oct. 7 for \$80,000, 2-story, brick, stone trim high school and auditorium; 16 classrooms, built-up comp. roof, wood floors; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., Monroe. 8-7

La., New Orleans—Orleans Parish School Bd., City Hall Annex, ready for bids in about 30 days for 3-story, brick, stone trim Palmer School on Clouet St. between Vellere and Urquart Sts.; 29 classrooms domestic science dept., kindergarten, kitchen and boiler room, built-up comp. roof wood floors A. E. Christy, Supvg. Archt. 8-21

La., Tickfaw—Tangipahoa Parish School Bd., Amite, receives bids Oct. 14 for \$20,000, 1-story, 93x93 ft., brick veneer, 6-classroom and auditorium school; Favrot & Livaudais, Ltd., Archts., Hibernia Bank Bldg., New Orleans. 9-11

La., Vivian—Caddo Parish School Bd., E. Weldon Jones, Shreveport, receives bids Oct. 8 for remodeling school auditorium; \$18,000 including ventilating system.

Miss., Bryant—Bd. of Trustees, Bryant Torrance Consolidated School Dist., receives bids Sept. 27 for school building.

Miss., Corinth—Alcorn County Bd. of Supervisors plans calling election on \$12,000 bonds in Oakland School Dist. to erect school.

Miss., Jackson—Bd. of Trustees, Mississippi School for Deaf has low bid from John Garrett for repairs to buildings; Frank P. Gates, Archt., New Merchants Bank Bldg. 8-28

Mo., Springfield—Southwest Missouri State College, W. I. Baker, Sec., Bd. of Regents, received bids Sept. 19 for interior alterations to science building, including partitions and finishing ground floor, plumbing, heating and other mechanical equipment; Hawkins & Nicholas, Archts., McDaniel Bldg.

N. C., Chapel Hill—University of North Carolina, Gov. Max Gardner, Chmn., having plans prepared by Atwood & Weeks, Inc., Odd Fellows Bldg., Raleigh, for \$250,000, rein. conc. football stadium; seat 25,000 people.

N. C., High Point—Bd. of Education, T. Wingate Andrews, Supt., selected Harry Barton, Jefferson Bldg., Greensboro, to prepare plans for proposed junior high school on Jones St.

Okla., Kingfisher—Bd. of Education erect school; Tonini & Bramblett, Archts., 416½ W. Main St., Oklahoma City; bids in.

Okla., Ponca City—Bd. of Education, L. K. Meek, Chmn., erect \$14,000 brick Sunny-side School; J. G. Cannon, Archt.; bids in.

Okla., Oklahoma City—Bd. of Education, J. G. Stearley, Clk., receives bids Sept. 29 on \$100,000 Capitol Hill Junior High School; brick and rein. conc., stone trim; Hawk & Parr, Archts., First Natl. Bank Bldg.

Tenn., Murfreesboro—State Bd. of Education, P. L. Harned, Chmn., Nashville, ready for bids in about 4 weeks for \$200,000 science building and home demonstration residence at State Teachers College. 7-31

Tenn., Nashville—Bd. of Education, Albert E. Hill, Pres., received bids Sept. 19 at office, Marr & Holman, Archts., Stahlman Bldg., for \$150,000 North Nashville Junior High School, 9th Ave., North and Scott St.; 3 stories, fireproof, brick, limestone trim, auditorium to seat 900 people, 27 classrooms, cafeteria and kitchen. 7-17

Tex., Houston—Sisters of Incarnate Word and Blessed Sacrament, Capital and Crawford Sts., having plans prepared by Maurice J. Sullivan, Second Natl. Bank Bldg., for \$200,000 convent on 40-acre tract on Bissonett Ave. between Avenue B and Avenue C, near Bellaire, for Incarnate Word Academy; 4 stories, rein. conc., brick, fireproof, terrazzo floors.

Tex., Mathis—Mathis Ind. School Dist. Trustees ready for bids for 1-story, brick and tile, fireproof high school; tile roof; Olin Boese, Archt.; Morris & Noonan, Asso. Archts.-Engrs., both Builders Exchange Bldg., San Antonio; Lloyd D. Royer, Mech. Engr., Smith-Young Tower, San Antonio. 7-10

Tex., Rio Grande City—Rio Grande City Ind. Dist. School Bd. ready for bids about Oct. 10 for \$60,000, 2-story, brick and rein. conc. high school and \$40,000, 1-story, brick and rein. conc. grade school; R. Newell Waters, Archt., Weslaco. 9-11

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., has low bid at \$769,832 from Walsh, Burney & Key, 928 N. Flores St., for \$1,000,000 Spanish type, brick and rein. conc. Senior High School, Spanish Acres; plumbing, \$40,339, heating, \$37,972, Jud & Ormond, 703 N. Flores St.; electric, \$33,132, Crowther Electric Co., 2016 Broadway; 2 and 3 stories with one story wings for cafeteria and gymnasium, cast stone trim, tile roof, auditorium to seat 2000; Adams & Adams, Archts., Real Estate Bldg.; W. E. Simpson Co., Engrs., Milam Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 8-21

Tex., San Marcos—South West Texas State Teachers' College, A. B. Mayhew, Pres., Bd. of Regents, soon let contract for manual arts building cafeteria addition and improvements; brick, tile, stone, rein. conc.; W. E. Ketchum, Archt., Pope Bldg., Austin.

Tex., Stanton—Valley View School Dist. votes Sept. 21 on \$12,500 bonds.

Tex., Tuscola—Tuscola Ind. School Dist. voted \$10,000 bonds for school. 9-4

Stores

D. C., Washington—Freeman & Cahn erect store and apartment, 1427 Good hope Road, S. E.; Lewis W. Giles, Archt., 1200 U St., N. W.

Fla., Lakeland—James T. Doster, Pres., Northington Drug Co., 2707 Hanover Circle,

Birmingham, Ala., erect \$18,000, 2-story, 100x69 ft., brick store and office building; steam heat; H. D. Breeding, Archt., 1114 N. 21st St., Birmingham.

Ky., Ashland—E. L. Helfrich remodel McCleary Bldg., 15th and Winchester Sts., for stores; 3 stories, 75x105 ft.; new fronts, terra cotta outside trim, hollow tile interior partitions. See Want Section—Building Material and Equipment.

N. C., Winston-Salem—H. H. Jones Furniture Co., H. G. Lewis, Mgr., plans improvements to store on N. Liberty St.

Okla., Enid—Mrs. L. Fossett erect \$25,000 store and rooming house; 2 stories, 3 stores on first floor, 20 rooms on second floor.

S. C., Charleston—Following contractors estimating on \$175,000, 3-story and basement, brick store for S. H. Kress & Co., 114 Fifth Avenue, New York, bids September 22: Claussen-Lawrence Construction Co., 1394 Gwinnett St.; Henry M. Morrison, 112 Eighth St., both Augusta, Ga.; T. R. Worrell, Box 102; The Artley Co., 504 E. Bay St., both Savannah, Ga.; Frost Construction Co., Shepherd Bldg., Montgomery, Ala.; Potter & Shackelford, Allen Bldg., Greenville, S. C.; Goode Construction Co., 11 E. Fifth St.; J. A. Jones Construction Co., Commercial Bank Bldg.; Southeastern Construction Co., 210 W. Second St., all Charlotte, N. C.; Simons-Mayrant Construction Co., Peoples Bldg.; M. L. Stephenson, 273 E. Bay St.; Dawson Engineering Co., 10 Gillon St.; G. M. Canady, 56 Maple St.; Charleston Constructors, Inc., 58 Broad St., all Charleston; U. A. Underwood, Inc., Murchison Bldg., Wilmington, N. C.; J. V. & R. T. Burkes, Inc., American Bank Bldg., New Orleans, La.; Bowen Construction Co., El Paso, Tex.; W. M. Simpson, Archt. for company.

Tex., Fort Worth—James Harrison, B. Burnett Bldg., has permit for \$11,944 improvements to brick store, Houston and Second Sts.

Tex., Houston—McCrory Stores Corp., 1107 Broadway, New York, ready for bids about Oct. 1 for \$250,000, 3-story and basement, fireproof building, 507 Main St.; R. C. Zeissler, Construction Supt. for company; W. M. Simpson, Archt. for company. 8-14

Tex., San Antonio—Schulte United, Inc., Geo. A. Young, Sr., Asst. V.-P., 485 Fifth Ave., New York, remodel building, Houston and N. Presa Sts.

Theatres

Ga., Thompson—Owners of Knox Bldg. plan rebuilding structure destroyed by fire at loss \$35,000.

Mo., Kansas City—Midland Theater & Realty Co., M. B. Shanberg, V.-P., Midland Bldg., remodel and enlarge Apollo Theatre, 3227 Troost Ave.

Tenn., Memphis—Warner Brothers Pictures, Inc., 321 W. 44th St., New York, expend \$50,000 for improvements to theater.

Warehouses

Fla., Winter Haven—D. H. Gilbert, Monticello, plans \$30,000, 1-story, 100x80 ft., rein. conc. frame warehouse; brick walls, comp. roof; probably day labor.

La., New Iberia—River and Land Transportation Co., A. G. Bail, 1921 Audubon St., New Orleans, plans erecting cotton warehouse.

N. C., Asheville—Carolina Tobacco Corp., care Gay Green, Pres., Concord Place, soon ready for bids for \$30,000, 1-story, brick, warehouse, Valley and Beaumont Sts.; comp. roof, 60,000 sq. ft. floor space; Ronald Greene, Archt., Oates Bldg. 9-11

Tex., Dallas—Huey & Philip Hardware Co., 1029 Elm St., has permit for \$25,000, 2-story, brick warehouse, 1802 Griffin St.

Tex., San Antonio—J. W. Francis Co., 1113 W. Houston St., erect fireproof warehouse and sales room, S. Cherry St. and M. K. T. & S. P. tracks.

BUILDING CONTRACTS AWARDED

Bank and Office

Mo., Kansas City—Kansas City Structural Steel Co., 21st and Metropolitan Ave., reported, has contract for 5000 tons struct. steel for Fidelity National Bank & Trust Co.; Hoyt, Price & Barnes, Archts., Telephone Bldg.; Thompson-Starrett Co., Inc., Contr., 104 S. Michigan Ave., Chicago, Ill., Tenth and McGee Sts., Kansas City, etc. 8-7

Tex., Dallas—Following sub- and material contracts let on \$1,500,000, 22-story, 58x110-ft. Tower Petroleum Bldg. for Tower Corp., care McNeny & McNeny, Athletic Bldg., on which excavation and foundations are about completed, steel work to start in about 1 week; Excavation, Dallas Transportation Co., 817 Bourbon St.; Struct. and rein. steel, Mosher Steel & Machinery Co., 5209 Maple

St.; elevators, Otis Elevator Co., 1822 Young St., Limestone, Texas East Stone Co., 744 E. 14th St., all Dallas; granite, American Black Granite Co.; terra cotta, Atlanta Terra Cotta Co., Glenn Bldg., Atlanta; cement, Blue Diamond Co., 2422 Myrtle St.; gravel and sand, Penniman Gravel & Material Co., 3000 Junus St.; Browne windows, Universal Building Products Co., Construction Bldg.; all Dallas; glass and glazing, Pittsburgh Plate Glass Co., Pittsburgh, Pa.; steel stairs, R. J. DeWees Co., 3015 Grand St.; Mark Lemmon, Archt., Construction Indus. Bldg.; Henger & Chambers, Contrs., Dallas Natl. Bk. Bldg., both Dallas; Contrs. expect to let contracts within 2 weeks on plumbing, heating, ventilating, elect. wiring and sprinkler system. 8-21

Tex., Lubbock—Lubbock Mercantile Co., Temple Ellis, Pres., let contract at \$180,000 to J. J. Clements to remodel and enlarge 4-story Temple Ellis Bldg. recently damaged by fire; S. B. Haynes, Archt.; fireproof, 6 stories. 9-4

Churches

Ala., Huntsville—Central Church of Christ let contract at \$23,400 to G. A. Rodgers for bldg.; Harold Riggins, Archt.

Mo., Washington—First Church of Christ, Scientist, let contract to J. E. Crosby, 7564 Olive St., Kansas City, for constr. bldg.; 1 story, 34x54 ft., conc. floors and foundation, asphalt roof; Ernest O. Brostrom, Archt., Reliance Bldg., Kansas City.

Tex., El Campo—St. Philip the Apostle R. C. Church let contract to T. B. Hubbard Construction Co., 1507 Shepherd St., Houston, on cost plus basis for \$50,000 auditorium; rein. conc., face brick, tile backing, steel truss, cast stone trim, wood floors, tile roof, 56x36 ft., rein. conc. foundation; F. B. Gaenslen, Archt.; R. A. Laidlaw, Engr., both Builders Exch. Bldg., San Antonio.

Tex., Fort Worth—W. W. Kimball Co., 308 S. Wabash Ave., Chicago, Ill., has contract at \$85,000 pipe organ for First Baptist Church; V. E. Shanklin, Archt., 206 Burt Bldg.; Dee Humphrey, Contr., Burt Bldg., both Dallas. 12-26

Tex., Frost—Methodist Episcopal Church, South, Rev. W. W. Richeson, Chmn., Bldg., Comm., let contract to Rufus Fowler, Frost, for \$10,000 church; 2 stories, 49x70 ft., white pine floors, cement foundation, metal shingle roof; furnishings, equipment, etc., \$2000; J. O. Galbraith, Archt., Hillsboro. 9-11

City and County

Ala., Mobile—City let contract to R. E. Sundberg Construction Co., 269 N. Royal St., for branch library; brick, stone rtim, rein. conc. frame; Geo. B. Rogers, Archt., Van Antwerp Bldg. 7-31

Okla., Bartlesville—City Council let contract at \$36,175 to Hamilton Construction Co., Bartlesville, for grandstand and fence, ball park; conc., 75x150 ft.; J. E. McCormick, Engr., Bartlesville; Wood & Witten, Const. Engrs., 204½ E. Third St., Tulsa, Okla. 8-7

Okla., Tecumseh—Pottawatomie County Bd. of Commrs. let contract at \$24,546 to R. M. Everett, Maud, to repair courthouse; A. C. Davis & Sons, Archts., Shawnee. 8-7

Dwellings

Ala., Birmingham—W. B. Hillhouse, Lincoln Life Bldg., erect brick veneer residence, Edgewood; 1 story, comp. shingle roof, hot air heat; Jas. L. Gatling, Archt., Bankers Bond Bldg.; Harvey Tappan, Contr., 1434 S. 28th St.

Ala., Sylacauga—W. B. McDonald let contract for \$17,500 residence to M. C. Monroe, Sylacauga; wood shingle, 2 stories and basement, comp. roof, 3 baths, steam heat, garage and servants' quarters; Chas. H. McCauley, Archt., Jackson Bldg., Birmingham. 8-28

D. C., Washington—Southern Construction Co. erect \$20,000 brick dwelling, 318-22 Peabody St., N. W.; 2 stories.

Fla., Orlando—Mrs. A. B. Watrous, Orington Hotel, Evanston, Ill., completed foundation for \$14,000 residence, 400 W. Parr Ave.; frame and stucco, 1 and 2 stories, 78x72 ft., wood, conc. and tile floors, clay tile roof; furnishings, equipment, etc., \$2500; H. Ring Clauson, Archt., 2212 Lake Michigan Bldg., Chicago, Ill.; Howard C. Kiehl, Contr., 500 W. Central Ave., Orlando. 8-28

Fla., Miami Beach—Wm. Sparks erect \$15,000 addition to residence, 2142 N. Bay Rd.; C. E. Haley, Contr., Florida Press Bldg.

Fla., Miami Beach—John Porter, Hartford, Conn., let contract to Gunn & Goll, security Bldg., Miami, for \$50,000 residence, 4745 Pine Tree Drive; hollow tile, stucco, rein. conc. foundation, hardwood and tile floors, tile roof, steel sash, garage and servants' quarters; John Bullen, Archt. Exchange Bldg., Miami.

Fla., Miami Beach—Mrs. Mary Schweinert, 42 Riverside Drive, New York, and Hotel Pancoast, Miami Beach, erect \$50,000 residence and garage, Bay Rd. and 43rd St.; Wilbert Harborn, Contr., 2618 N. Greenway Drive, Coral Gables, Fla.

Fla., Miami Beach—Wm. Sparks, 2142 N. Bay Rd., erect additions to residence; \$15,000; baths, bedrooms; C. E. Haley, Contr., Seybold Bldg., Miami.

Fla., Miami Beach—Mrs. E. Lybrook, 2424 N. Bay d., alter and erect additions to residence; \$15,000; C. E. Haley, Contr., Seybold Bldg., Miami.

Ga., Atlanta—A. Brownlee, 1408 McPherson Ave., S. E., erect brick veneer residence, 1450 McPherson Ave., S. E.; 1 story, hardwood floors, hot air heat; owner builds.

Ga., Atlanta—Reuben Gerbert, 534 Orme Circle, N. C., erect 2 brick veneer dwellings, 502-06 Page Ave., N. E.; hardwood floors, comp. roofs, hot air heat; owner builds.

Ga., Atlanta—Suburban Realty Co., 101 Marietta Bldg., erecting brick veneer dwelling, 341 Sisson Ave., M. E.; 1 story, oak floors, comp. shingle roof; R. S. Monday, Archt., Norris Bldg.

La., New Orleans—Chas. Louviere, Contr., 500 block Hennessy St., erect dwelling.

La., New Orleans—Philip Schneller, Contr., 4141 Orleans St., erect single dwelling, Aurora St. and Bonnahel Place, Jefferson Parish; sheet metal work, orna. iron.

La., New Orleans—Julian & Osborne, Contrs., 2412 Wistaria St., erect duplex, City Park section; tile roof.

La., New Orleans—Miss Hilda Bowman erect single residence, Vicksburg St. near Clayton St.; orna. iron, sheet metal, tile work; D. J. Schwartz, Contr., 5818 Catina St.

Md., Baltimore—Clifton K. Wells, Jr., 2538 Old York Road, erect 2 dwellings, 5200-11 Springlake Way, Homeland; brick, 2 stories, \$20,000; owner builds.

Md., Baltimore—Dorothy H. Howard erect brick residence, 9 E. St. Martins Rd., Guilford; 2½ stories; Frank K. Littleton, Contr.

Md., Baltimore—Harry F. Page, Bldr., 327 E. 30th St., erect \$15,000 dwelling, St. Albans Way, Homeland; Wrenn, Lewis, Westenhaver & Jencks, Archts., Title Bldg.

Md., Baltimore—Dr. Geo. Finney, 525 N. Wolfe St., laying foundation for stone residence, Green Spring Valley; 2½ stories, 83x25 ft. and 30x58 ft.; Palmer & Lambdin, Archts., 413 N. Charles St.; Edw. A. Cullings, Contr., 692 Gladstone Ave.

Md., Baltimore—Wm. M. Baker, Tudor Hall, erect \$10,000 residence, 703 W. Lake Ave.; brick, 2 stories, 48x43 ft.; Wm. F. Stone, Jr., Archt., 2612 N. Charles St.; L. L. Chambers, Inc., Contr., 36th St. and Roland Ave.

Md., Baltimore—Dr. Willis S. Manges 235 S. 15th St., Philadelphia, Pa., erect for \$20,000 residence, Gibson Island; shingle, 2½ stories, central section 23x30 ft.; Addison F. Worthington, Archt., 12 E. Pleasant St., Baltimore; Jos. D. Groh, Contr., Pasadena, Md. 9-11

Mo., Kansas City—Jas. B. Mitchell, care Morrison Grain Co., Board of Trade Bldg., erecting Colonial residence, 59th St. and High Drive; 3 baths; Clarence E. Shepard, Archt., Huntzinger Bldg.

Mo., Kansas City—Schutzel-Harding Investment & Building Co., 1019 E. 63rd St., started work on 6 brick bungalows, 66th St. Terrace and Locust St., Armour Hills Gardens; erect 3 English type bungalows, 7567-71 Walnut St., 3 on Jefferson St. near 71st St., 1 at 416 W. Darthmouth Rd. and 1 at 608 W. 70th St. Terrace.

Mo., St. Louis—St. Louis Hills Realty Co., Boatmen's Bk. Bldg., erect \$18,000 brick dwelling, 6545 Delor St.; 2 stories, 44x35 ft., slate roof, hot water heat; Kelley & Robertson, Archts.; H. J. Karr, Contr., 6424 Mardel St.

Mo., St. Louis—M. Taylor, 3117 Watson St., erect 12 brick dwellings, 5200-5211-19 Tholoan, 5219-27 Mardel and 6322 Juniata St.; 1 story, 26x45 ft., asphalt shingle roofs, hot air heat; \$60,000; plans and constr. by owner.

Mo., St. Louis—H. Kramer, 4445 Kingshighway, N. E., erect \$10,000 brick residence, 4475 Kingshighway, N. E.; 2 stories, 28x39 ft., Certain-teed shingle roof, hot water heat; G. Becker, Archt., Ferguson; W. B. Sommers, 5733 Kingshighway, N. W., St. Louis.

Mo., St. Louis—Sanford J. Bernheimer, 5327 Pershing St., started work on French country type residence, Ballas Rd.; painted brick, steel hip roofs, 3 baths, 2-car garage; Maritz & Young, Inc., Archts., Chemical Bldg.

N. C., Asheville—Louis A. Vallier, Biltmore Forest, erect \$20,000 residence, Hill Top Rd., Biltmore Forest; stucco and tile, 2 stories and basement, 2 wings 70x19 ft., wood floors, slate roof, vapor heat; W. W. Dodge, Jr., Archt., Vanderbilt Rd., Biltmore Forest; L. L. Merchant Construction Co., Contr., 290 Biltmore Ave.

N. C., Pinehurst—Colonial Building Co., Inc., Aberdeen, N. C., excavating for \$100,000 dwelling, Knollwood near Pinehurst; Colonial type, brick, 2 stories, hardwood floors, conc. and brick foundation, tile roof; Wm. C. Holleyman, Jr., Archt., Greensboro Bk. & Tr. Co. Bldg., Greensboro; Jewell-Riddle Co., Inc., Contr., Sanford. 9-11

Okla., Oklahoma City—Glenn O. Laws started work on \$12,000 residence, 713 E. 29th St., by day labor; 2 stories, 46x33 ft.; W. J. Laws & Co., Archts., First Natl. Bank Bldg.

Okla., Oklahoma City—A. H. Wilson, 209 E. 26th St., started work on two \$10,000 duplexes, E. 26th St.; brick, 2 stories.

Okla., Oklahoma City—C. B. Anderson, 1019 W. 24th St., started work on \$14,000 brick veneer residence, 1128 E. 19th St.; 2 stories.

S. C., Myrtle Beach—N. H. Hazelwood, Forest Hills, Danville, Va., erect 2-story residence; Southern Builders, Inc., Contrs., Florence, S. C.

Tex., Eagle Pass—John K. Burr, 103 Genesee Rd., San Antonio, let contract at \$13,796 to Hill & Combes, Junction, for struct. clay tile and stucco ranch house, Maverick County; 2 stories, 35x45 ft., rein. conc. foundation, wood and tile floors, shingle roof; Wilder & Smith, Archts., Texas Theater Bldg.; W. E. Simpson & Co., Engrs., Milam Bldg., both San Antonio. 8-28

Tex., Houston—Hayes & Orem, 833 Yale St., started work on \$12,500 brick veneer residence, 2615 Riverside Drive; 8 rooms, 2 stories.

Tex., Houston—Herbert J. Schott, 30 Waugh Drive, let contract for \$23,000 residence, 3014 Del Monte Drive, to Oscar Fridh, 2217 Brun St.; face brick, 2 stories and attic, 58x38 ft., oak and rubber tile floors, conc. foundation, shingle roof; J. W. Dehnert, Archt., 624 Esperson Bldg.; work started. See Want Section—Building Material and Equipment. 9-11

Tex., Houston—A. C. SoRelle, Esperson Bldg., framing \$45,000 brick veneer residence, 2619 N. Calumet St.; 2 stories, oak floors, tile roof; J. M. Glover, Archt.; Jas. A. Roberts, Contr., both Bankers Mtg. Bldg. 8-28

Tex., Kerrville—Wm. Moody, III, 16 Cedar Lawn St., erect ranch house, 40 miles from Kerrville; natural stone and rein. conc., 2 stories and basement, 274x188 ft., 17 baths, patio tile roof, hot water heat; Carl Jules Weyle, Archt., Hollywood, Calif.; Northern Construction Co., Contr., Esperson Bldg., Houston; sub-contract bids Sept. 15.

Government and State

Ga., Atlanta—State Highway Dept. let contract at \$104,430 to L. C. Ellison & Co., 2907 Avenue P, Birmingham, Ala., for office and laboratory bldg.; fireproof, rein. conc., brick and tile, 2 stories and part basement, 105x50 ft. and 50x50 ft., tar and gravel roof, stone trim; A. TenEyck Brown, Archt.; A. Barill, Jr., Associate, both Forsyth Bldg.; S. B. Slack, Engr., care Owner. 9-11

Ga., Fort Benning—Service Co. has steam heating and plumbing contract for 66 non-commissioned officers' quarters and 9 company officers' quarters, Fort Benning; elect. work, Walker Electrical Co., 111 12th St.; Murphey Pound, 214 Hill Bldg., gen. contract at about \$450,000; all Columbus; structures masonry and stucco, wood framing, tile roofs. 9-11

La., New Orleans—R. B. Wilby, Selma, Ala., has \$60,000 plumbing contract for \$300,000 U. S. Quarantine Station; Batson-Cook Co., Contr., West Point, Ga. 9-3

Md., Baltimore—Additional sub-contracts let on \$2,950,000 post office: Bookcases, Art Metal Construction Co., 173 W. Madison St.; misc. iron work, orna. metal work, brass and bronze, General Bronze Corp., both Chicago, Ill.; hardware, Eastern Hardware & Supply Co., 139 S. Charles St., Baltimore, Md.; marble, Gray Knox Marble Co., Southerland Ave., Knoxville, Tenn.; waterproofing, Hydroseal Waterproofing Co., 835 N. Third St., Philadelphia, Pa.; exterior light fixtures, Newman Manufacturing Co., Cleveland St. and N. & W. Rwy., Cincinnati, O.; P. Severin Co., Contr., 222 W. Adams St., Chicago, Ill. 8-7

Md., Fort George G. Meade—Constructing Quartermaster let contract at \$191,674 to National Contracting Co., Laurel, Md., for 3 field, 9 company and 8 non-commissioner officers' quarters. 8-7

Mo., Sedalia—Treasury Dept., Jas. A. Wetmore, Act. Supv. Archt., Washington, D. C., started work on \$125,000 post office; fireproof, terra cotta facing, 80x80 ft., marble and maple floors, rein. conc. foundation; Kellogg & Anderson, Contrs., Taylor, Tex., present address Sedalia. See Want Section—Building Material and Equipment. 9-11

N. C., Cherokee—Department of Indian Affairs, Washington, D. C., erect 5 bldgs., Cherokee Indian Reservation; brick; \$30,000; day labor, L. W. Page, Supt. of Constr., at site.

Va., Richmond—Karl L. Black & Co., Inc., 1312 Grayland Ave., Richmond, has contract to raze bldg. on site for \$900,000 extension to post office, custom house and court house; National Construction Co., Contr., Glenn Bldg., Atlanta, Ga. 8-28

Hospitals, Sanitariums, Etc.

Ga., Atlanta—Henrietta Eggleston Memorial Hospital, W. R. Prescott, Chmn., Bd. of Trustees, let contract to Geo. A. Clayton Co., Bona Allen Bldg., for nurses' home; hollow tile and stucco, 2 stories and basement, 75x46 ft. and 20x45 ft., tile and tar and gravel roof, conc. footings, cement and tile floors, steel toilet partitions; Morgan Dillon & Lewis, Archts., Grant Bldg. 8-21

Okla., Norman—Following sub-contracts let on \$150,000 ward bldg., Central Oklahoma Hospital for Insane: Brick, McAlester Brick Co., McAlester; steel, Western Iron & Foundry Co., Wichita, Kan.; stone, Carthage Marble Corp., Carthage, Mo.; heating and plumbing, McCoy Heating Co., Local Bldg. & Loan Bldg., Oklahoma City; wiring, Cralle Electric Co., Norman; plans by Huseman Co., Chickasha; Brown & Myers, Engrs., Petroleum Bldg., Oklahoma City; Richter & Lail, Contrs., Pauls Valley. 9-4

Tenn., Nashville—St. Thomas Hospital, 21st Ave. and Hayes St., erect sun parlor addition, 4 stories, remodel roof and install fire escapes; \$20,000; Foster & Creighton Co., Contr., Fourth & First Bldg.

Hotels and Apartments

Fla., Miami Beach—A. R. Singer, 306 Euclid Ave., let contract to J. Albert, 226 Fourth St., for \$15,000, 2-story, 40x45 ft., rein. conc. block and stucco apartment, 1029 Euclid Ave.; B. Kingston Hall, Archt., 609 Collins Ave. 9-11

Fla., Miami Beach—Pancoast Hotel has permit for \$10,000 improvements; L. A. Wessell, Contr., 305 23rd St.; Russell T. Pancoast, Archt., 1139 Lincoln Road.

Fla., Miami Beach—Benjamin Kasten & Sons have contract for plastering and Miami Weather Strip Co., 1136 N. E. Second Ave., Miami, steel sash and doors for \$130,000 apartment, 1116 Ocean Drive, for Chas. D. Boulton for which Hubbell & Hubbell, Inc., 1316 N. E. Second Ave., Miami, have general contract; Henry LaPointe and Arthur Laidler-Jones, Asso. Archts., Huntington Bldg., Miami. Contract noted awarded in 6-26.

Ga., Atlanta—Peachtree Terrace Apartment Co., 1355 Peachtree St., N. E., remodel apartment; \$19,000; finish interior of basement, partitions walls, decorating, plastering and painting; W. P. Francis, Contr., 201 Luckie St., N. W.

Ky., Louisville—Biltmore Development Co., Harry Platoff, Pres., 2504 Rutherford Wynd. plans to soon start work on \$300,000, 11-story, 30-suite addition to Commodore Apartments, Bonnycastle and Everett Aves.; Platoff & Bush, Contrs., 122 W. Liberty t.

Miss., Vicksburg—E. M. Kelley erecting 2-story, brick, 4-apartment on Markham St.

Mo., Kansas City—Following sub-contracts awarded on \$900,000, 11-story, 145x74 ft., rein. conc. apartment hotel, under construction (seventh floor) at 324 E. Armour Blvd., for Gate City Building Corp., 105 W. 10th St.; Heating and plumbing, Laitner Plumbing & Heating Co., 30th and Gillham Roads; electric work, Wachter Electric Co., 3908 Bell St.; elevator, Otis Elevator Co., 1920 Wyandotte St.; plaster, metal lath, Walter Plastering Co., Ry. Exch. Bldg.; interior trim (gum), Rust Sash & Door Co., 962 Hickory St.; W. D. Snyder, Gen. Contr., Commerce Bldg.; Philip T. Drotts, Archt., Reliance Bldg.; Erwin Pfuhl, Engr., Finance Bldg. 3-13

Mo., St. Louis—H. Kobermann, 7242 Gravois St., has permit for two \$6500, 1-story, 29x45 ft. brick tenements, 4147 and 4095 Haven St., and two \$1000, 1-story, 26x18 ft.

brick garages, 6512 and 6614 Morganford St.; A. Kobermann, Archt.-Bldr., 7242 Gravois St.

Mo., University City, St. Louis—A. A. Williams, 4993 Blow St., erect 2-story and basement, 25x47 ft., brick, 2-apartment, 7200 Tulane Ave.; O. J. Popp, Archt., Arcade Bldg.; owner builds; ready for sub-bids.

Okla., Oklahoma City—Following additional sub-contracts awarded on \$700,000, 11-story, 200-room hotel, Grand and Hudson Aves., for Lucian Black, Huckins Hotel, on which work is under way by E. V. McCright & Co., Gen. Contrs., Commerce Exchange Bldg.; Electrical, Oklahoma Electric Supply Co., 1209 W. First St.; elevator enclosures, metal doors and windows, Bissell Builders Supply Co., Colcord Bldg.; artificial stone, Harter Marblecrete Stone Co., 1614 W. Main St.; cement, Okla. Portland Cement Co., Perrine Bldg.; brick and tile, Acme Brick Co., Barniff Bldg.; millwork, Tibbs Dorsey Co., 911 S. Walker St.; lathing and plastering, Ray E. Alexander, Trades Natl. Bldg., all Oklahoma City; elevators, American Elevator & Machine Co., Construction Industries Bldg., Dallas, Texas; finish hardware, Stone Hardware & Implement Co., Shawnee, Okla.; Flint & Broad, Archts., Melba Bldg., Oklahoma City. Noted work started 8-7.

S. C., Charleston—Fort Sumter, Roland A. Mumford, Mgr., plans improvements to hotel; redecorate, paint, furnishings, etc.; day labor.

Tex., Dallas—Inge Construction Co., Republic Bank Bldg., reported, plans 20-story hotel, Akard and Commerce Sts.

Tex., El Paso—Walter Goode erect \$26,000, 8-apartment bungalow court, 1100 N. Stanton St.; Ramey Brothers, Contrs., Mito Bldg.

Tex., San Antonio—A. Carter, Travis Bldg., started work on \$30,000, 2-story, 82x30 ft. apartment and \$10,000, 1-story, 40x30 ft. residence; rock veneer on frame, pine and hardwood floors, built-up and tile roofs; Kelwood Co., Inc., Archts., Travis Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower; owner builds; A. J. Madlein, Supt. for owner. See Want Section—Building Material and Equipment. 9-11

Va., Martinsville—C. L. Washburn excavating for 2-story, 28x30 ft., brick apartment; hardwood floors, comp. roof; A. L. Lester, Contr., 221 Broad St. See Want Section—Building Material and Equipment.

Miscellaneous

Fla., Miami—Joseph T. Ryerson & Son, Inc., Jersey City, N. J., have contract for 160 tons rein. steel for \$375,000 clubhouse for Indian Creek Golf Club for which John B. Orr Construction Co., N. E. Sixth St., has general contract; R. A. Taylor, Spanish Village, Miami Beach, and Treanor & Fatio, Phipps Plaza, Palm Beach, Asso. Archts., noted, 8-14, contract awarded.

Okla., Oklahoma City—C. W. Beck, First Natl. Bank Bldg., erecting \$70,000 chapel in Memorial Park, 135-acre burial park, 7 miles north of Oklahoma City; stone and clinker brick, tile roof, \$7500 organ will be installed, auditorium to seat 350 people.

S. C., Winnsboro—Winnsboro Mills, controlled by United States Rubber Co., Broadway and 58th St., New York, let contract to Fiske-Carter Construction Co., 121½ W. Main St., Spartanburg, for \$50,000, 2-story and basement, 88x75 ft. and 1-story and basement, 95x55 ft., community building; brick, comp. roof; plans by Lockwood, Greene Engineers, Inc., Spartanburg. 8-7

Tex., Denton—Denton County Fair Assn., Dr. Jack Skiles, Pres., let contract to R. L. McCallard for 100x180 ft. livestock show building. 8-21

Tex., Fort Worth—Keetch Manufacturing Co. has contract for sheet metal for \$200,000 fruit terminal and wholesale market under construction (on foundation) for Texas Ice & Refrigerating Co., 1201 Jones St.; 2 stories, fruit terminal, 410x63 ft., wholesale market, 200x100 ft., conc. and brick, tar and gravel roof; Thos. S. Byrne, Inc., Engrs., Gen. Contrs., Fort Worth Natl. Bank Bldg.; Walter Roloff, Archt., 349 Woodlawn St., St. Louis, Mo. 9-11

Tex., Mercedes—American Rio Grande Land and Irrigation Co. let contract to Jacob Fossler for \$25,000 addition to clubhouse.

Railway Stations, Sheds, Etc.

Okla., Oklahoma City—C. C. Cooke Sheet Metal Co., 512 W. Noble St., has contract for sheet metal work for \$2,500,000 Union Station under construction; Tankersley Construction Co., Gen. Contr., Cotton-Grain Exchange Bldg.; R. C. Stephens, Archt., Grisco Bldg., St. Louis. Contract awarded. 7-10

Schools

Ala., Dora—Bd. of School Trustees erect \$20,000, 1-story brick addition to school; S. G. Evans, Contr., Hartselle; plans by State Bd. of Education, Montgomery. 5-22

Ky., Richmond—Ashland Brick Co., Ashland, has contract for 150,000 brick for Weaver Health Bldg., at Eastern State Normal School for which J. J. and T. J. Murphy, Bowling Green, have general contract at \$139,137; C. C. & S. K. Webber, Archts., Fort Thomas. Contract awarded. 7-10

La., Mt. Hermon—Washington Parish School Bd., D. H. Stringfield, Sec., Franklin, let contract at \$14,068 to French & Fuller, McComb, Miss., for 1-story brick high school. 8-7

Miss., Clarksdale—Coahoma County Bd. of Education, Ermin Pitts, Supt., let contract at \$51,699 to E. S. Morris to rebuild 4 buildings recently destroyed by fire at Coahoma County Negro Agricultural High School near Clarksdale; buildings consist of 20-room dormitory, 5-room teachers' home, one-room mess hall and 4-room practice school; brick veneer, fireproof. 9-4

Miss., Fayetteville—School Bd. let contract to C. E. Campbell & Son, Bude, Miss., for rebuilding negro school.

Mo., Jefferson City—Bd. of Curators, Lincoln University, I. C. Tull, Bus. Mgr., let contract to H. W. Underhill Construction Co., Braniff Bldg., Oklahoma City, Okla., and Kansas City, Mo., for \$250,000 education building; plumbing, \$12,725, J. Louis Drum, Columbia, Mo.; heating and ventilating, \$28,790, J. B. McCarty Co., 423 St. Louis St., Springfield; electric, \$9904, Steppelman Electric Co., Jefferson City; Wm. B. Ittner, Archt., 3615 Olive St., St. Louis. 8-28

Mo., Joplin—Bd. of Education, Dr. J. J. Burnett, Pres., let contract at \$13,237 to Garrison & ones for addition to junior high school, 8th and Wall Sts.

Okla., Greenfield—Greenfield Consolidated School Dist., Will Barrett, Clk., let contract at \$20,260 to Maddox & Morrison, El Reno, for 1-story, brick and stone, 6-room school; The Huseman Co., Archt., Chickasha. 7-24

Okla., Tecumseh—Bd. of Education, W. D. Fox, Clk., let contract at \$17,136 to R. M. Everett, Maud, for 1-story and part basement, 125x100 ft., brick and stone junior high school wood and cement floors, asphalt roof; Albert S. Ross, Archt., American Bldg., Ada. See Want Section—Building Material and Equipment. 8-21

Tex., Mont. Belvieu—Barbers Hill Ind. School Dist. Trustees erect 1-story, brick, rein. conc. and stone high school; Nolan Stewart, Contr., Adams Bldg., Port Arthur; Harry D. Payne, Archt., Kirby Bldg., Houston. 8-14

Tex., Waller—Waller Consolidated Ind. Dist. School Bd., Dr. H. A. Berry, Pres., started work on \$30,000, 6-room and auditorium high school; R. B. Brashear, Contr.; C. G. Curtis, Archt., 1628 Hawthorne St., Houston. 6-26

W. Va., Bluefield—Beaver Pond Dist. Bd. of Education, Edwin C. Wade, Sec., let contract at \$18,850 to T. J. Cruise, Reid St., to complete auditorium and gymnasium, lobby, main stairway, classroom No. 17 and finishing basement, at Ramsey Junior High School; Garry & Sheffey, Archts., Bailey Bldg. 8-28

W. Va., Frram—Elk Dist. School Bd., L. C. Faus, Supvr., erect \$14,500, 4-room brick school.

Stores

Ala., Birmingham—A. Roobin, 927 Conroy Road, let contract to C. P. Gillespie, 1728 E. Lake Blvd., for 1-story, 42x52 ft., brick store, 37th Place and N. 11th Ave.; H. Lewis Settle, Archt., 2514 N. Sixth Ave.

Fla., Miami—Model Land Co., Ingraham Bldg., has permit for \$15,000, 1-story, conc. and stucco store, E. Flagler St. between S. E. Third Ave. and Biscayne Blvd., to be occupied by American Express Co., 206 E. Flagler St.; R. W. Edholm, Contr., 835 Lincoln Road, Miami Beach; Frank Wyatt Woods, Archt., Ingraham Bldg.

La., Plaquemine—E. Hirsch & oSn let contract at \$18,986 to Butler & O'Donnell, Port Allen, for 2-story, 64x55 ft., brick store; built-up comp. roof; Lewis A. Grosz, Archt., Raymond Bldg., Baton Rouge. 8-7

Mo., St. Louis—Theresa Rosegrant, 3098 Lucas St., started work on \$10,000, 2-story, 50x80 ft., brick store, Kienlen and Easton Aves.; Sol Abrahams & Sons, Contrs., Chemical Bldg. 9-4

N. C., Enka—American Enka Corp., J. Heykoop, Ch. Bldg. Engr., let contract to L. L. Merchant Construction Co., 290 Biltmore

Ave., Asheville, for \$50,000, 1-story and basement, 140x60 ft., brick and conc., fireproof building to house retail store and meat market, dry goods store, drug store, barber shop, beauty parlor, pressing club and post office; maple, terrazzo and tile floors, 10-year copper flashing roof; building to be leased to Holmes Bryson, owner of Grace Supply Co., who will operate under separate corp. See Want Section—Building Material and Equipment. 9-11

Tenn., Knoxville—H. L. Dulin, 402-06 Gay St., remodel Dulin Bldg. for department store; \$50,000; leased to Knox Dry Goods Co., incorporated with \$150,000 capital, subsidiary of Interstate Department Stores, Meyer Mittenenthal, V-P., 113 Fifth Ave., New York; Weaver & McGill, Contrs., General Bldg.; R. F. Graf & Sons, Archts., Journal Bldg.

Tenn., Nashville—Mrs. Amella Timothy,

206 Sixth Ave., expend \$20,000 to remodel 2-story, brick and conc. store; Foster-Creighton Co., Contr., Fourth and First Bldg.; Asmus & Clark, Archts., Nashville Trust Bldg. 8-21

Theatres

Ga., Brunswick—Publix Lucas Jenkins Corp., care A. J. Jones, Supvr. of Construction, 15 Screven Ave., N. E., Atlanta, remodel Ritz Theatre, Newcastle and F Sts.; \$40,000; day labor. 8-14

Ky., Ashland—Ashland Brick Co. has contract for 115,000 brick for Paramount Theatre, 13th and Winchester Sts., for Ashland Theaters Corp.; Kaiser & Ducett Co., Gen. Contrs., Joliet, Ill.; A. S. Graven, Inc., Archt., 100 N. LaSalle St., Chicago. 7-23

La., Tallulah—M. M. Bloom let contract to Tom Wilmoth, Camden, Ark., for \$70,000, 138x300 ft., steel frame and brick commercial

unit for 13 stores, post office, theater and filling station; N. W. Overstreet, Archt., Standard Life Bldg., Jackson, Miss. 9-11

Tex., Victoria—Rubin Frels let contract at \$26,735 to H. N. Hansen Construction Co., Brownsville, for 2-story, 100x95 ft., brick and conc. theater; Stanley W. Bliss, Archt., Harlingen. 9-4

Warehouses

Mo., St. Louis—Frank Yawitz Realty Co., 233 Pine St., erect 1-story, 124x126 ft., brick warehouse, Lucas Ave.; O. J. Popp, Archt., Arcade Bldg.; owner builds; ready for sub-bids.

Okl., Oklahoma City—Reinhart & Donovan, Contrs., Trades Natl. Bldg., started work on \$22,000, 2-story brick warehouse for American Railway Express Co., 108 W. Grand St.

THE CLASSIFICATIONS IN THIS SECTION ARE:

WANT SECTION

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Air Compressor, and Motor.—East Carolina Ry., H. C. Bridgers, Pres., Tarboro, N. C.—Wants prices and data on very small air compressor, that will not require over ¼ or ½ h. p., at most, and motor to operate it.

Blue Printing and Photostat Machines.—Savannah Blue Print & Drafting Co., 100 Drayton St., Savannah, Ga.—Wants prices and data on blue printing machinery and photostat machines.

Canning Equipment.—South Side Marketing & Finance Corp., C. C. Lewis, Box 754, Hopewell, Va., is engineer in charge of erecting 5 canning plants in counties adjacent Hopewell—Wants prices and data from manufacturers of equipment for canning industry.

Comfort Stitching Machinery.—Southern Bedding Co., Inc., Vine & Patterson Sts., Lexington, Ky.—Wants machinery to stitch comforts.

Grinding Machines.—T. R. Hodges, Co., Key, Fla., interested in manufacturing oyster shell grit for poultry—Wants prices and data from manufacturers of grinding machines.

Motor.—J. W. Darden, Hogansville, Ga.—Wants prices and data on 10 to 15-h. p. motor with starter, 220 volt, 3 phase, 60 cycle.

Motors.—Electrical Equipment Co., Inc., 406-410 W. Davis St., Raleigh, N. C.—Wants prices and data on following motors, rebuilt or burned out: 2 20-h. p., 1200 r. p. m., 220 volt, 3 phase, 60 cycle, with or without starters; 3 20-h. p., 1800 r. p. m., 220 volt, 3 phase, 60 cycle, with or without starters; 10 5-h. p., 1200 r. p. m., 220 volts, 3 phase, 60 cycle motors with or without starters; 2 15-h. p., 1800-220 volt, 3 phase, 60 cycle.

E. L. Bruce Co., W. W. Partee, Purchasing Agt., Memphis, Tenn.—Wants prices and data on following:

- (1) **Generator Set**—turbo, direct connected, 3600 r. p. m., 3 phase, 60 cycle, 440 volt, steam and designed for 150 lb. pressure, non-condensing, to exhaust against back pressure of 10 lb. gauge
- (2) **Voltage Regulator**—General Electric, Type TA, Form F, 2 relays, cat. No. 171827, with condenser, resistor, 220-110 volts, 200 watt potential transformer and brackets for panel mounting.

R. M. Bozman, Lineville, Ala.—Wants prices and data on following:

- (1) **Lathes**—used, Ober or DeFinance, or both
- (2) **Singletree Manufacturing Machinery**—power device for fastening irons on singletrees.

W. M. Smith & Co. (Mchy. Dealer), 3601 First Ave., North, Birmingham, Ala.—Wants prices and data on following:

- (1) **Bolt Threader**—double head
- (2) **Punch press**—used, capacity up to 1 in. in 1 in. thick metal.

Miscellaneous

Baskets.—Lawrence MacRee, Greensboro, N. C.—Wants prices and data on 2000 1-bu. tub baskets, in which sweet potatoes may be harvested, and without being disturbed, cured, stored and finally sold.

Earthenware.—Tre-Ripe Citrus Products Co., Owen Burns, Pres., Sarasota, Fla.—Wants prices and data from manufacturers of small earthenware jars suitable for marmalades, and earthenware jars of 2 to 1 gal. capacity, suitable for hermetically sealed liquids.

Lipstick Manufacturing Machinery.—California Cosmetic Corp., Melvin C. Churchill, 1559 Western Ave., Los Angeles, Calif.—Wants prices and data on machinery for manufacturing lipstick.

Lipstick Containers.—California Cosmetic Corp., 1559 N. Western Ave., Los Angeles, Calif.—Wants prices on lipstick containers.

Paper (Blue Print).—Savannah Blue Print & Drafting Co., 100 Drayton St., Savannah, Ga.—Wants prices and data on blue print paper.

Singletree Irons.—R. M. Bozman, Lineville, Ala.—Wants prices and data on irons for finishing singletrees.

Building Material and Equipment

Albert S. Ross, Archt., American Bldg., Ada, Okla., wants prices on following for \$25,000 school, Tecumseh, Okla.:

Cast Stone
Flooring—hardwood
Plaster Board
Roofing—built-up.

A. L. Lester, Contr., 221 Broad St., Martinsville, Va., wants prices on following for 2-story, 28x30 ft. apartment building:

Electric Refrigerators
Flooring—hardwood, linoleum, composition
Metal Ceilings
Plaster Board
Rolling Partitions
Roofing (hip)—asbestos and asphalt shingle

Steel Sash and Trim
Ventilators
Wire Glass

Anthony DeH. Zink, Archt., Seybold Bldg., Miami, Fla., wants prices on following for \$30,000 apartment, Miami Beach, Fla.:

Cast Stone
Electric Refrigerators
Flooring—hardwood, tile, composition
Roofing (flat)—built-up.

F. P. Helfner, Contr., Route 1, Chamblee, Ga., wants prices on following for \$60,000 dwelling:

Cast Stone
Electric Refrigerators
Flooring—hardwood, terrazzo, tile
Limestone
Marble
Roofing (hip)—slate, tile
Terra Cotta Trim
Brass and Bronze Work.

Calrow, Browne & FitzGibbon, Archts., Royster Bldg., Norfolk, Va., want prices on following:

Flooring—terrazzo
Roofing—built-up
Steel Sash and Trim.

E. L. Helfrich, Ashland, Ky., wants prices on following in connection with improvements to McCleary Bldg.:

Flooring—linoleum, composition
Tile—hollow
Terra Cotta Trim
Brass and Bronze Work.

The Wilson Company, Natl. Bank & Trust Bldg., Charlottesville, Va., estimating on \$175,000 Nurses' Home, University of Virginia, and wants prices on following material and sub-contracts, on or before Sept. 20:

Artificial Stone
Common Brick
Door Ventilators
Electrical Work
Heating
Junior Beams or Bar Joists
Marble, Tile and Terrazzo
Metal Windows and Doors
Metal Furring, Lathing and Plastering
Millwork
Miscellaneous and Ornamental Iron
Painting
Plumbing
Roofing and Sheet Metal Work
Slate Partitions and Wainscoting
Slate Blackboards
Structural Steel
Plans and specifications by University Architectural Comsn., J. K. Peebles, Chmn. Law Bldg., Norfolk, Va.; on file at Builders' Exchange at Richmond and Norfolk, Archt.'s office and office of The Wilson Co.

Kellogg & Anderson, Contrs., Sedalia, Mo., want prices on following for 125,000 post office:

Flooring—terrazzo
Marble
Roofing—built-up, tile
Tile—gypsum, hollow
Brass and Bronze Work
Also wants sub-bids on all items not let, including:

Electric Work
Heating plant—low pressure steam
Plumbing.

J. Heykoop, Ch. Bldg. Engr., American Enka Corp., Enka, N. C., wants prices on following for \$50,000 store:

Electric Refrigerators
Elevators
Flooring—hardwood, terrazzo, tile
Limestone
Marble
Roofing (flat)—built-up
Tile—interior.

W. A. Stanton, Archt., Vicksburg, Miss., wants prices on following for \$37,500 experiment station, Stoneville, Miss.:

Cast Stone
Elevators
Roofing (flat)—built-up
Tile—hollow
Wire Glass.

J. W. Dehnert, Archt., 624 Esperson Bldg., Houston, Tex., wants prices on following for \$23,000 dwelling:

Flooring—hardwood, tile.

Kelwood Co., Inc., Archts., Travis Bldg., San Antonio, Tex., wants prices on following for \$30,000 apartment and \$10,000 residence:

Cast Stone
Electric Refrigerators
Flooring—hardwood, tile
Inclinator
Roofing—built-up, tile
Tile—hollow
Ventilators.

Lionel F. Favret, Contr., Louisiana Bldg., New Orleans, La., wants prices on following for \$85,000, 4-story store and office building:

Flooring—linoleum
Metal Doors
Steel Sash and Trim.

M. P. Gonnissen, Bldr., 3610 Hillsdale Rd., Baltimore, Md., wants prices on following for dwellings:

Flooring—hardwood, linoleum, terrazzo, tile, composition
Mail Chutes
Marble
Plaster Board
Roofing (hip)—slate, tile
Steel Sash and Trim.

Bids Asked

Air Compressors.—U. S. Engr. Office, Huntington, W. Va.—Bids Sept. 26 for air compressors.

Air Compressor.—Purchasing and Contracting Officer, San Antonio, Tex.—Bids Sept. 25 for 10-h. p. air compressor.

Air Compressor.—Dist. Comms., Washington, D. C.—Bids Sept. 23 for 2 portable air compressor units, gasoline driven.

Bridge.—West Point, Miss.—See Construction News—Bridges, Culverts and Viaducts.

Bridges.—Magnolia, Miss.—See Construction News—Bridges, Culverts and Viaducts.

Bridges.—State of Missouri—Bids for 34 bridges. See Construction News—Roads, Streets, Paving.

Cable, etc.—Office of Ch. of Engrs., U. S. Army, Washington, D. C.—Bids Sept. 25 for 2000 ft. 2-conductor cable, and reel.

Clearing.—See Miscellaneous.

Coal (Bituminous).—U. S. Engr. Office, McCall Bldg., Memphis, Tenn.—Bids Sept. 23 for bituminous coal.

Creosoted Material.—Wilkins County Supvrs., Woodville, Miss.—Bids Oct. 6 for carload creosoted material for first district.

Electrical Supplies.—See Miscellaneous.

Engineer's Transit.—See Miscellaneous.

Electrical Equipment.—Town, Mayor and Bd. of Aldermen, Mary B. Scott, City Clk., Woodville, Miss.—Bids Oct. 7 for voltage regulator for: 150-kv-a. alternator, 2300 volts with exciter, 15 kw., 125 volts, 257 r. p. m., 90-kv-a. alternator exciter, 7½ kw.; 1400 r. p. m., shunt wound, 47½-kv-a. alternator exciter, 5 kw., 1400 r. p. m., shunt wound.

Fill Approaches to Bridge.—Kentucky. See Construction News—Bridges, Culverts and Viaducts.

Fire Hose.—City, H. H. Fielder, Clk., Huntington, W. Va.—Bids Sept. 22 for 4000 ft. 2½ in. double jacket fire hose, equipped with rocker lug connections.

Gasoline.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Sept. 23 for 7000 gal. gasoline.

Gasoline, Kerosene, etc.—Second Quartermaster, Marine Corps, Q. M. Dept., Washington, D. C.—Bids Sept. 22 for 131,000 gal. gasoline, 8100 gal. kerosene, and 255,000 gal. fuel oil, delivery various posts.

Gravel.—Leake County Supvrs., J. P. Dickens, Pres., Carthage, Miss.—Bids Oct. 6 for one or more carloads gravel.

Guide Fenders.—U. S. Engr. Office, Jacksonville, Fla.—Bids Oct. 8 for constructing 2 guide fenders within jetties at Volusia Bar, St. Johns River, Fla.

Lighting Towers.—Ch., Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids Sept. 24 for aviation obstacle lights on 2 radio towers at naval radio station, Virginia Beach, Va.

Miscellaneous.—Navigation Dist. Comms., B. C. Allin, Secy., Houston, Tex.—Bids Sept. 26 for engineer's transit, clearing dumping ground areas, electrical supplies, office furniture.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Sept. 26 for following, Sch. 2589:

Struc. steel, plate steel, duplex pump, ring bolts, turnbuckles, spring hinges, locks, knobs, brass chain, cable thimbles, etc.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Oct. 3 for following, Sch. 2590:

Portland cement, sodium, nitrate dynamite and electric detonators.

Nails and Spikes.—State Highway Dept. Ben M. Sawyer, Ch. Commr., Columbia, S. C.—Bids Sept. 22 for standard common wire nails and spikes.

Office Furniture.—See Miscellaneous.

Pipe (Terra Cotta).—See Sewer Construction.

Plumbing.—Treasury Dept., Office of Supv. Archt., Washington, D. C.—Bids Oct. 2 for remodeling toilet rooms, new hot-water tank, etc., in U. S. post office, et. h., and cu. h., Wheeling, W. Va.

Road.—Liberty, Tex.—See Construction News—Roads, Streets, Paving.

Road.—Louisiana—See Construction News—Roads, Streets, Paving.

Roads.—State of Missouri—Bids for 75 roads. See Construction News—Roads, Streets, Paving.

Rope.—U. S. Shipping Bd., Washington, D. C.—Bids Sept. 26 for manila rope for 3 or 6 months' period beginning Oct. 1.

School Furniture, Equipment and Supplies.—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Sept. 24 for miscellaneous furniture, equipment and supplies for various schools for Dept. of Education.

Screw Machine.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Sept. 23 for motor driven automatic screw machine.

Sewer Construction.—County Comms. of Baltimore County, Towson, Md., Bids Sept. 29 for excavation trenches and furnishing and laying vit. pipe sewer and appurtenances in certain streets West Catonsville; Contract No. 22-S work includes, 14,460 ft. of 8-in., 1340 ft. of 15-in., 3400 ft. of 18-in., 1750 ft. of 24-in. terra cotta sewers; 3733 ft. of 6-in. terra cotta house connections; specifications and drawings at office of B. L. Crozier, Ch. Engr., Baltimore County Metropolitan Dist., Towson.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Double Reduction Gears for Steamships.

Steamships with propeller speeds of 150 revolutions per minute, or below, are said to require a double gear reduction in order to realize the highest turbine and propeller efficiencies. An example is the steamship Munargo of the Munson Line, operated mainly on the New York-Nassau-Havana-Miami route. The vessel was launched by the New York Shipbuilding Co. at Camden, N. J., in December 1921, and is fitted with compound turbines and De Laval double reduction gears made by the De Laval Steam Turbine Company, Trenton, N. J. Since the steamer was commissioned, it has made over 1,040,000 nautical miles.

\$2,000,000 Coal Washing Plant.

A \$2,000,000 coal washing plant, to be one of the largest and most complete units of its kind, will be erected at the Clairton By-Products Coke Works of the Carnegie Steel Company, a subsidiary of the United States Steel Corporation. Contract for design and installation of the plant was awarded to the Koppers Rheolaveur Company, Pittsburgh. Plans to construct the plant were reached after several years' study and investigation relating to the benefit of washed coal for making coke for metallurgical purposes. The plant will have a washing capacity of 12,000 tons per day of 20 hours. The purpose is to remove extraneous non-coking material from the coal and also to reduce the sulphur, thereby making the coke more satisfactory for use in steel plants. Coal will be brought to the Clairton plant from the mines by river barges, as at pres-

ent, and unloaded and handled by existing equipment. In the line of long belt conveyors now taking coal from the barges to the bins over the coke ovens, there will be inserted a gate by which coal may be diverted to the washing plant. Immediately above and as a part of the washing plant building, there will be three 1000-ton steel bins for storing various kinds of coal. Coal below ¾-inch in size will be mechanically dried by Carpenter centrifugal driers; above that size it will be dried on long dewatering shaking screens, thus insuring to the coke ovens coal with the minimum amount of moisture.

Sewers.—Mayor and City Council, Hogansville, Ga.—Bids Sept. 26 for storm drainage on several streets. See Construction News—Roads, Streets, Paving.

Steel.—U. S. Engr. Office, Huntington, W. Va.—Bids Sept. 22 for soft and tool steel.

Steel Plates.—U. S. Engr. Office, Huntington, W. Va.—Bids Sept. 25 for struc. steel plates.

Shingles.—U. S. Engr. Office, Huntington, W. Va.—Bids Sept. 25 for slate surfaced asphalt shingles.

Spyglasses.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Sept. 23 for spyglasses.

Streets.—Hogansville, Ga.—See Construction News—Roads, Streets, Paving.

Tanks.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Oct. 1 for water tank and gasoline and oil tank, delivery Philadelphia, Pa.

Telephone System.—Supt. of Prisons, Dept. of Justice, Washington, D. C.—Bids Sept. 23 for telephone system, complete, Atlanta, Ga.

Transmitters.—Ch. Signal Officer, Munitions Bldg., Washington, D. C.—Bids Sept. 25 for 3 transmitters and transmitters in lots of 2 to 6.

Turbines (Water).—U. S. Engr. Office, Huntington, W. Va.—Bids Sept. 24 for vertical water turbines, with gears, etc.

Vegetable Peeling Machine.—Marine Corps, Marine Corps, Q. M. Dept., Washington, D. C.—Bids Sept. 23 for vegetable peeling machine, delivery Hampton Roads, Norfolk, Va.

Water Piping, etc.—Supv. Archt., Treasury Dept., Washington, D. C.—Bids Oct. 3 for installing new brass water piping, etc., in U. S. post office, Hot Springs, Ark.

Water Softening System.—U. S. Veterans' Bureau, Arlington Bldg., Washington, D. C.—Bids Sept. 23 for zeolite water softening system, at U. S. veterans' hospital, Muskogee, Okla.

Republic Steel Appointments.

T. M. Gridler, chairman and president of the Republic Steel Corp., Youngstown, Ohio, announces that Harry T. Gilbert, vice president in charge of sales, has been made special assistant to the president. Norris J. Clarke, formerly vice president and chairman of the executive committee of the Lamson & Sessions Co., Cleveland, has been appointed vice president in charge of sales of the Republic Steel Corp.

Paradon Opens Atlanta Office.

The Paradon Manufacturing Co., Arlington, N. J., announces appointment of Roy E. King as Southeastern representative with an office at Atlanta, Ga. Mr. King was formerly connected with the Paradon office at Tulsa, Okla. Paradon chlorinators, spare parts and accessories will be carried in stock for servicing the Southeast.

Connects With Western Company.

The Michaels Art Bronze Co., Inc., Covington, Ky., designer and manufacturer of ornamental bronze and iron for banks and public buildings, has formed a connection with the Carter Specialties Company, San Francisco.

Trade Literature

Modern Central Stations.—The Ingersoll-Rand Company, New York, recently released for publication a booklet, "Modern Central Stations," the sixth volume of a series. It is made up of articles selected from technical magazines and should be valuable to engineers and others concerned in power generation. The publication presents a number of interesting illustrations, and some of the articles deal with Southern projects. One is by D. Nabow, mechanical engineer of the Duke Power Co., Charlotte, N. C., on engineering requirements that determined the design of the Riverbend power plant of the Duke company; another by William G. Allan of the Southeastern Engineering Co., Mobile, Ala., which built a steam power plant near Mobile for the Southeastern Production Co., to supply power and heat to a new paper mill of the International Paper Company. John M. Gallalee, construction engineer and professor of mechanical engineering of the University of Alabama, and R. M. Ferrell, engineer of the Alabama Power Co., Birmingham, contribute an article on the new Gorgas steam plant of the Alabama company, while R. C. Stewart of the Stone & Webster Engineering Corp., contributes one on a new 43,750-kw plant of the El Paso Electric Co., and C. L. Dowell, construction engineer of the Central Light & Power Co., San Antonio, Tex., on the new Devil's River steam station of that company.

Textile Blue Book.—Davison's Textile Blue Book for 1930, covering textile mills of the United States, Canada and Mexico, with a textile supply directory and maps, has been issued by the Davison Publishing Co., New York. It incorporates Dockham's American Report and Directory of textile manufacture and the dry goods trade, and as a new feature presents a revised classification of cotton fabrics and other products of all cotton mills. Material for this classification was procured in co-operation with the United States Department of Commerce and other research bureaus.

Fenestra Casements and Windows.—The Detroit Steel Products Company, Detroit, Mich., manufacturers of sash, doors, auto springs and other products, have issued a booklet dealing with Fenestra Fenecraft casements and another devoted to Fenestra Fenmark windows. The casements are designed for distinctive residences, while the Fenmark windows are intended for use in all types of monumental, educational and public buildings. The publications constitute two sections of the Fenestra Blue Book.

Cotton Textile Depreciation Rates.—A brief on behalf of the Cotton Textile Institute, Inc., New York, as presented before the Bureau of Internal Revenue of the United States Treasury Department on the subject of the proposed standardized depreciation rates for the cotton textile industry, has been published by the Institute in the form of a booklet. It contains discussions of interest to manufacturers other than textile producers.

U. S. Steel Quarterly.—The autumn number of the U. S. Steel Quarterly has been issued by the subsidiary manufacturing companies of the United States Steel Corporation, New York. A new identification mark recently adopted by these companies is described in the publication. Also a feature of the quarterly is a description of the Texas Warehouse at Houston, 600 by 500 feet, said to be the largest structure devoted exclusively to warehouse purposes and serving the Southwest with products of the American Steel & Wire Company, Chicago; Carnegie Steel Company, Pittsburgh, and the Tennessee Coal, Iron & Railroad Company, Birmingham. Other leading articles are: Watertight Concrete; Corrosion of Steel by Atmospheric Influences; story of the development of the Warrior and Gulf barge service by a subsidiary of the Steel Corporation; Welding Steel Structures, and Electrically Welded Barges.

Walking Dragline Excavator.—The Monighan Manufacturing Corporation, Chicago, has introduced new model, 6150, of the Monighan walking dragline excavator, equipped with Monighan type Diesel engine drive. This machine, among the largest built, is said to have met every field requirement and is designed to supply a demand for larger and more mobile dragline equipment. It is illustrated and described in bulletin No. 31-A, recently issued by the company.

Southern Built Steamship Survives Hurricane

As the conclusion to an editorial picturing a desperate and successful fight for survival by the steamship Coamo against the Santo Domingo hurricane, the New York Herald Tribune in a graphic editorial describing the struggle pays tribute to the Newport News Shipbuilding and Dry Dock Company, a Southern company and one of the greatest shipbuilding concerns in the country. The Coamo, a 7000-ton passenger and freight steamer of the New York & Porto Rico Steamship Company, was struck by a wind force of 150 miles an hour. "Windows were broken in the pilot house and skylights on the boat deck were blown away," Captain Evans reported later. This ship "pounded heavily in the rough seas; the barometer had gone off the bottom of the scale," and all on board "wondered whether any fabric put together by man could withstand the smashing hammer blows of the sea."

"She is a wonderful vessel, to withstand this, being in ballast," Captain Evans wrote in the log, and: "Don't praise me," added the Coamo's chief engineer; "praise the shipbuilding company. They made a fine ship when they made this one."

After high tribute to the officers and crew, the Herald Tribune editorial concludes:

"But the shipbuilding company also is composed of human beings—to be exact, it is the Newport News Shipbuilding and Dry Dock Company—and so even the ship comes down in the end

Motor-Driven Grading Units.—A motor grader catalog has been issued by the Austin-Western Road Machinery Co., Chicago, covering in detail the latest developments of the Austin four-wheel drive machine known as the Dual Drive, including single drive units. Austin dual drive motor graders are furnished in three sizes, Models 20, 12½-25 and 30, and the single drives in two sizes, models 20 and 30. The machines may be equipped with pneumatic tires, crawler treads, power drag attachment, scarifier, snow plow or snow blade.

Convertible Power Shovels.—Bay City Shovels, Inc., Bay City, Mich., has issued catalog K-3, illustrating and describing 14½-ton model K and 18-ton model K-2 Bay City full revolving convertible power shovels, cranes and excavators. The machines are shown at work with shovel, clamshell, dragline, trench hoe and skimmer attachments. A second edition of catalog T6, devoted to the Bay City tractor shovel and the Bay City crane, is also ready for distribution, as is catalog C2 describing the Crane-mobility.

Arc Welders and Induction Motors.—Bulletins Nos. 901 and 101, devoted respectively to Burke arc welders and Burke S and SV induction motors, have been issued by the Burke Electric Company, Erie, Pa.

to the skill and ingenuity and honest workmanship of men. Before these, even the hurricane is unsuccessful."

The Newport News Shipbuilding and Dry Dock Company, of which Homer L. Ferguson is president, also builds other great machinery for land transportation uses.

Big Texas Ranch Residence

Kerrville, Tex. — W. L. Moody III, Galveston, has awarded contract to the Northern Construction Co., Houston, to erect a big ranch residence about 40 miles from Kerrville, according to drawings and specifications by Carl Jules Weyl, Hollywood, Cal. The building will be two stories and basement, about 274 by 188 feet, with a patio in the center, to contain guest room, servants' quarters, 17 baths and other facilities. It will be of natural stone and reinforced concrete, with tile roof, and will be equipped with a hot water heating plant.

\$1,650,000 Corpus Christi Bonds

Corpus Christi, Tex. — City council passed an ordinance calling an election October 14 on a bond issue of \$1,650,000, or any sum not to exceed that amount. The bonds, if authorized, would be issued annually after the year 1930 in installments not to exceed \$650,000 each and sold as provided by law or, if issued as a whole, would be sold in annual installments not to exceed \$650,000 each.

\$15,560,000 BID ON PLANE CARRIER

Newport News Shipbuilding and Dry Dock Submits Low Bid

Newport News, Va.—The Newport News Shipbuilding and Dry Dock Co. submitted the low bid for construction of the hull and machinery of a new aircraft carrier for the Navy Department, at \$15,560,000, with a time limit of 40 months. As the bid exceeded the Navy Department's estimate of \$14,600,000, it is understood that some time will elapse before a contract is awarded. Congress limited the entire authorization to \$19,000,000 and, as it is estimated that the vessel's ordnance will cost between \$4,000,000 and \$5,000,000, it is suggested that the navy yards, which were not invited to submit bids, will now be invited to bid in order to bring the cost within the Department's estimate, or the ordnance specifications be revised to give more funds for the hull and machinery.

Oneida Institute Appeals For Aid

Splendid work is being done by Oneida Institute, located at Oneida, Clay County, Ky., and an appeal is made for funds to continue its usefulness. Owing to depressed business conditions, Rufus R. Wilson, Field Secretary, states that Oneida is facing a critical period in its history. If it is to survive it must have additional support.

Founded 30 years ago by James A. Burns, himself descended from a long line of mountaineers, to bring a school and teachers to boys and girls of the Cumberland mountain region, Oneida now has a well-rounded plant worth \$800,000 and gives instruction to 500 pupils otherwise cut off from advanced training of any sort.

Oneida offers a child a chance for a whole year for \$150 and gifts are requested to make it possible to provide others with this opportunity. Contributions may be sent to 600 Bible House, New York.

Tennessee Community Wants Industries

In a recent letter to the MANUFACTURERS RECORD, William R. Hooten of Paris, Tenn., states that Paris will soon have natural gas available at reasonable rates, both for industrial and domestic uses, and that business interests, including Mayor Frank B. McNeill, are anxious to further the development of Paris and Henry County. For manufacturing and office purposes, there is now available a 2-story and basement brick building recently vacated. High grade china

clays are produced in Henry County and vicinity and, with the advent of natural gas, it is thought kilns would be induced to locate near the source of the clay, while other developments would also follow.

Contracts on \$1,000,000 Courthouse

Beaumont, Tex.—General contract has been awarded by the Jefferson County Commissioners to McDaniel Bros., Beaumont, at \$652,439, to erect a new courthouse here. The building will be 14 stories and basement, with two 3-story wings, of reinforced concrete, steel, stone and brick construction, and will cost about \$1,000,000 complete. Other contracts were awarded as follows:

Plumbing and heating—Heating & Plumbing Co. Beaumont, at \$73,000.
Electrical work—Jack Hyde Electric Co., Port Arthur, Tex., \$15,000.
Elevators—American Elevator Co., New York.

Fred C. Stone and A. Babin, both of Beaumont, are the architects.

Cement Industry Adopts Plan to Aid Employment

Secretary of Labor James J. Davis among others has voiced strong approval of the nation-wide employment service established by the cement industry to retain trained workers and to solve its own employment problems. This approbation was given in a letter to Wm. M. Kinney, general manager of the Portland Cement Association, Chicago, in charge of the clearinghouse through which the cement industry is endeavoring to prevent the loss of skilled employees.

Mr. Kinney explained that cement companies which have no positions open are referring their applicants to the association which is also notified of openings in other companies. He said that trained men are one of the great assets of the cement industry and the industry wishes to keep them for its own sake, as well as for the sake of the worker.

Industries for Rural Communities

Industrial diversification, ranging from cotton mills to game birds, was suggested for the South by Joseph Hyde Pratt, consulting engineer, Chapel Hill, N. C., in a paper on "Rural Industries: Their Economic and Social Importance in Country Life," at the Institute of Public Affairs, University of Virginia. With the diversification of farm crops, said Mr. Pratt, there should be established in every agricultural community some industry that not only will absorb surplus products raised on the farm, but also, when possible, will care for the labor when not needed on the farm.

Of rural cotton mills, Mr. Pratt cited a belief that it will be practicable for the farmers and others in a community cooperatively to erect and own a cotton mill which will not only purchase its raw products from the community, but also furnish employment for many of the people of the community. Mills for making certain kinds of woolen goods, he added, also should be considered.

Cheese factories first were established, said Mr. Pratt, to utilize surplus milk, but, on account of their success, farmers have enlarged their herds of dairy cattle and are now producing milk especially for cheese factories.

"Canning factories can be made profitable establishments and provide a market for surplus tomatoes, beans, corn and other vegetables," Mr. Pratt continued, "and the surplus peaches, plums and other fruits and berries. Such canning factories will be able to give employment to a certain number of the neighboring farm population."

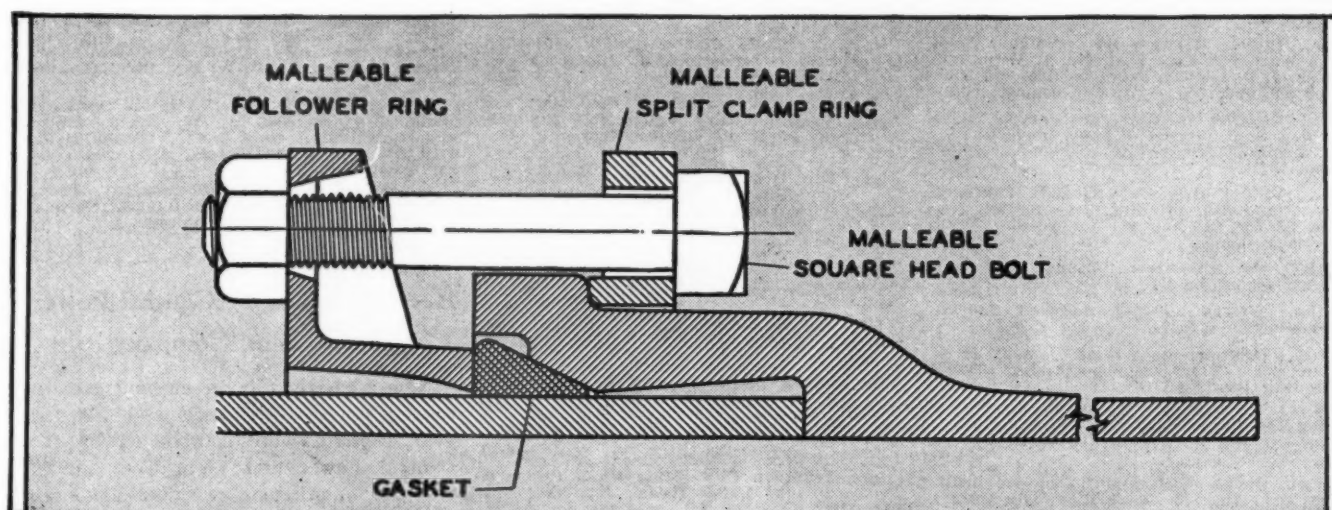
With "at least ten" pulp mills now in operation in the Southern Appalachian States, Mr. Pratt said that in several sections of the South, pulpwood now is considered a money or cash crop and its harvesting and marketing afford a means of utilizing surplus farm labor. There is opportunity for the establishment of other woodpulp mills in the Southern States which "will be of very great benefit to the farmers," and there is "no reason why cooperative community pulp mills should not be erected. To be owned and controlled by the farmers of the community."

Dogwood shuttle plants and locust pin factories also were suggested by Mr. Pratt, and plants for converting chestnut wood into fences and poles and similar articles. Quite a demand from both the North and the South for such shrubbery as rhododendron, laurel, hemlock, azelia, dog hobble and gaylax, also was reported by Mr. Pratt and he urged the farmers of the South to cultivate these markets.

"Another industry that has possibilities for the farmer, particularly the farm boy, is the raising of quail and pheasants," Mr. Pratt concluded. "While many persons think that growing game birds means putting them in a pen and taking care of them like chickens, such is not the case. The birds are turned loose on the farms, which must have plenty of cover in winter and spring."

Under proper conditions and with proper care, Mr. Pratt estimated that a dozen pair of quail will increase to more than 3000 birds in three years.

This *NEW* gas-tight ANTHONY JOINT

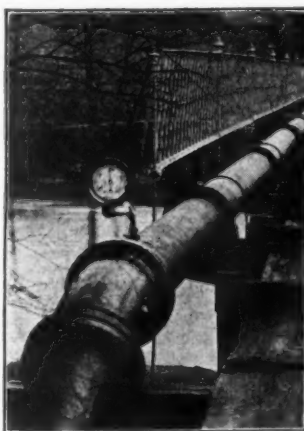


allows for greater deflection

It is remarkable, the amount of deflection which the improved Anthony Joint allows. This is due to the unique bell design as shown in the above illustration. You will notice that the gasket, while being held securely in place by the follower ring, functions as a fulcrum, allowing the spigot an unusual amount of play within the bell chamber.

Over the length of several pipes, this play or freedom results in a surprising amount of deflection. It permits a line of Anthony Joint pipe to be laid in steep or sharp curving trenches without the use of special bends.

Anthony Joint Pipe has been proved to be absolutely gas-tight under maximum pressure and deflection. And, it is quickly and easily assembled by unskilled labor.



The improved Anthony Joint is now made for both pit cast pipe and deLavaud centrifugally cast pipe. Rings and gaskets are interchangeable. We especially recommend Anthony Joint fittings for use also with standard plain end pipe.

Let us send you complete information regarding the advantages which this newly improved Anthony Joint offers.

United States Pipe and Foundry Co., Burlington, N.J.

Sales Offices:
New York

Philadelphia
Pittsburgh

Cleveland
Buffalo
Chicago

Our pipe bears the "Q-Check"
trademark of The Cast Iron
Pipe Research Association

Dallas
Birmingham
Kansas City

Minneapolis
Seattle

San Francisco
Los Angeles

FINANCIAL NEWS

Bond Issues Proposed

Ala., Fairfield—City, G. C. Culpeper, Clk. and Treas., receives bids Oct. 20 for \$54,000, 5% refunding bonds.

Ala., Mobile—Mobile County Bd. of Revenue passed resolution authorizing sale of \$350,000 4% road and bridge bonds from \$5,000,000 bond issue.

Ark., Russellville—Street Improvement Dist., Sam Davies, Engr., plans 19,000 sq. yd. paving W. Main St., section of State Highway No. 64.

La., Indian Bayou—Bd. of Commrs. of Fifth Ward Drainage Dist. No. 1, Vermillion Parish, J. B. Ledoux, Secy., receives bids Oct. 1 for \$17,000, 6% negotiable coupon bonds.

La., Rayville—Richland Parish, E. E. Keebler, Supt., Parish Schools, receives bids Oct. 7 for \$25,000, not to exceed 6% school bonds.

La., Ville Platte—City, Geo. L. Fontenot, Mayor, and Bd. of Aldermen, receive bids Sept. 23 for \$26,000, not to exceed 6% improvement bonds.

Miss., Cornith—Alcorn County may vote \$12,000 school bonds.

Miss., Greenville—City defeated \$30,000 bond issue for airport.

Miss., Jackson—State Bond Comsn., H. C. Yawn, State Treas., reported, offer \$850,000 refunding bonds on Oct. 1. 8-7

Miss., McComb—City passed ordinance providing for \$37,000 improvement bond issue.

Mo., Mountain Grove—City voted \$20,000 water works bonds. 8-28

Miss., Osyka—City recently passed ordinances providing for issuing bonds aggregating \$20,000, \$15,000 water and light retirement, \$5,000 refunding.

Mo., Ozark—Ozark Consolidated School Dist., reported, will not vote on \$40,000 bonds, as recently noted. 7-10

N. C., Williamston—Town, Bd. of Commrs., G. H. Harrison, Town Clk., receives bids Sept. 22 for \$35,000, not to exceed 6% street improvement bonds.

Okla., Oklahoma City—Chamber of Commerce approved \$9,391,286 bond issue and urged immediate steps to call election; to include water works, sewage disposal and sewers, viaduct, street widening, boulevard construction, convention hall, fair park buildings and improvements, comfort stations, city detention hospital, purchase of park property, fire stations and equipment, municipal repair shop, police signal system. 7-10, 7-17, 7-24 and 8-14

Okla., Chickashaw—City, Jess L. Larson, Mayor, plans calling election in October on bonds to finance \$200,000 water and sewer improvements.

Okla., Pauls Valley—City plans selling \$22,000 fire equipment bonds.

Tenn., Brownsville—Haywood County Hard Road Commn., James Tipton, Chmn., opens bids Oct. 7 for \$200,000, not to exceed 5%, \$1000 denom. bonds.

Tenn., Jackson—City, Lawrence Taylor, Mayor, voted \$75,000 armory bonds. 6-5

Tex., Amarillo—Potter County, W. W. Lynch, Commr., receives bids Oct. 6 for \$420,000 courthouse bonds. 9-11

Tex., Amarillo—Potter County Commrs. Court opens bids Oct. 6 for \$420,000 courthouse bonds. 9-11

Tex., Corpus Christi—City, P. G. Loven-skold, Mayor, may vote Oct. 14 on \$1,650,000 bay front improvement bonds, or any sum not to exceed that amount.

Tex., Cotulla—Cotulla County, G. A. Wel-housen, Judge, votes Oct. 18 on \$150,000 courthouse and jail bonds.

Tex., Dalhart—Dallam County, Floyd Mc-Neill, Judge, defeated \$550,000 road bonds. 8-7

Tex., Fort Worth—Tarrant County, W. E. Yancy, County Auditor, opens bids Sept. 22 for \$900,000 4½%, \$1000 denom. direct obligation road bonds. 8-21

Tex., Marlin—Falls County voted \$45,000, 5½% Wilson Road Dist. bonds. 8-21

Tex., Marlin—Falls County defeated \$75,000 Road Dist. No. 2 bonds. 7-31

Tex., Oakwood—Oakwood Independent School Dist., T. Labauve, Supt., recently voted \$35,000 bonds.

Tex., Torndale—City votes Oct. 9 on \$40,000, 5½% water bonds.

Tex., Tuscola—Tuscola Independent School Dist. voted \$10,000 bonds. 9-4

Bond Issues Sold

Ala., Homewood, Birmingham—Homewood City Council sold \$70,000, 6% funding bonds and \$85,000, 6% school bonds to Hanchett Bond Co., Chicago, at 95 per 100.

Ark., Camden—City sold \$26,500, 4% street improvement bonds to W. B. Worthen Co., Little Rock, at 95.45. 8-21

Ark., Siloam Springs—J. E. Bratt, Siloam Springs, purchased remainder of Siloam Springs school bonds, with total principal of \$20,000, 6% interest.

Ga., Barnesville—Lamar County sold \$65,000 courthouse bonds to J. H. Hillsman & Co., Inc., Atlanta, Ga. 7-31

Ky., Greenup—Greenup County Fiscal Court, W. S. Wheatley, Judge, sold \$100,000 refunding bonds to Little, Wooten & Co., Jackson, Tenn., at 100.275. 8-21

La., New Orleans—City, Bd. of Liquidation, City Debt, approved bid of Halsey, Stuart & Co., Inc., Chicago, for \$2,000,000 of \$9,000,000 special drainage bonds, at \$2,064.100. 8-21

Miss., Greenwood—City sold \$26,000 paving bonds to First Securities Co., Memphis, Tenn.

Miss., Laurel—City sold \$41,000 street improvement bonds to Whitney Central Trust & Savings Bank, New Orleans, La.

Miss., West Point—City, T. B. Miller, Clk., sold \$49,116, \$500 and \$1000 denom. coupon street improvement bonds to Saunders & Thomas, Memphis, Tenn., at \$110 premium. 8-21

Mo., Jefferson City—State Fund Commrs., Larry Brunk, State Treas., reported, \$5,000,000 block of 4% road bonds to National City Bank of New York, New York at \$5,020,995. 7-31

N. C., Asheville—City, Bd. of Commrs., sold \$25,000 hospital bonds to Bank of Randolph, and First National Bank, both Asheville, at \$50 premium. 8-21

N. C., Reidsville—City, Mrs. Lola Y. Irvin, Clk., sold \$65,000, \$100 denom. refunding bonds to Caldwell & Co., Nashville, Tenn., at \$742.95 premium. 8-14

Okla., Cordale—City sold \$39,000 sewer bonds to R. J. Edwards, Inc., Oklahoma City.

Okla., Stillwell—Adair County Commrs., C. W. Water, Chmn., sold \$60,000, \$1000 denom. courthouse bonds to First National Bank, Tulsa, for \$21.18 premium. 8-28

Okla., Waurika—Union Grade School Dist. No. 71, Jefferson County, sold \$7000 bonds to Calvert & Confield, Oklahoma City.

S. C., Winnsboro—Fairfield County Supvrs., S. D. Ellison, Clk., sold \$115,000, 5%, \$1000 denom. highway construction bonds to Weil, Roth & Irving Co., Cincinnati, and South Carolina National Bank, Columbia, at 5% and \$985.00 premium. 8-28

Tenn., Knoxville—City, John C. Borden, Director of Finance, sold \$1,000,000 revenue anticipation refunding bonds to Bankers Co. of New York, at 2.75% rate less \$101 premium.

Tenn., Sevierville—Sevier County Court sold \$180,000, 5½% funding bonds to Little, Wooten & Co., Jackson, at par and accrued.

Tex., Alpine—City, M. H. Moorman, Secy., sold \$121,000 refunding bonds at par; to B. F. Dittmar Co., San Antonio.

Tex., Abilene—Citizens National Bank, Abilene, recently purchased \$100,000, 5% water refunding bonds at par.

Tex., Amarillo—City, Lela Kreba, Sec., sold \$100,000 Amarillo Independent School Dist. bonds to Dallas Union Trust Co., Dallas, and C. W. McNear & Co., Chicago, at over 2% premium. 1-23

Tex., Corsicana—Navarro County sold \$325,000 Road Dist. No. 1 bonds to Corsicana National Bank at par, less 1%, plus accrued interest.

Tex., Lockhart—Caldwell County Commrs. sold \$350,000 Luling Road Dist. bonds to Citizens' State Bank, Luling, for par and accrued interest. 7-31

New Financial Corporations

Fla., St. Petersburg—Florida National Bank, capital \$100,000, being formed with J. G. Bright, 1514 Barnett National Bank Bldg., Jacksonville, Correspondent.

Ky., La Grange—First State Bank, capital \$25,000, chartered; R. C. Jones, Joe White-head.

Mo., Kansas City—Boulder Investment Co., capital \$20,000, chartered; H. A. Ault, National Fidelity Life Bldg.

Citizens Bank, War, W. Va., reopened as Bank of War; officers include R. L. 1st Pres., Berwin, W. Va.; W. R. Kiser, Cashier, and associates.

Owensboro Building & Loan Association, Owensboro, Ky., increasing capital \$1,500,000 to \$2,000,000.

Stockholders of Bank of Commerce, C. V. Sellers, Pres., Burlington, N. C., approved plan for sale of institution to Greensboro Bank and Trust Co., J. W. Fry, Pres., Greensboro, N. C.

Boards of Directors of Virginia National Bank, Norfolk, Va., A. W. Brook, Pres., and its affiliated state bank, Virginia Bank & Trust Co., both Norfolk, approved consolidation.

Wheatland Bank, A. S. Johnston, Pres., Wheatland, Mo., merged with Bank of Hermitage, W. L. Pitts, Pres., Hermitage, Mo.

Record Output for Central Power and Light Company

New high records in electric generation for a single month and for the year to date were established by the Central Power and Light Company at the end of August, sweeping aside all former company generation records, according to a statement by E. B. Neiswanger, president of the company at San Antonio. Compared with the first seven months of 1929, the company's output for the same period during 1930 shows an increase of 33 per cent.

The company's power plants, serving 165 communities in South and Southwest Texas generated a total of 31,054,069 kilowatt hours during August, an increase of 26.5 per cent over the kilowatt hour output of August, 1929. Total production January 1 to August 31 was 180,073,000 kilowatt hours.

Inasmuch as generation of electricity is fast becoming generally recognized as a dependable index to growth and prosperity of any given area, establishment of these new records reflects in good measure the sound conditions prevailing in South and Southwest Texas.

Industries to Use Natural Gas

Birmingham, Ala.—Contracts with the Southern Natural Gas Corp., of this city, involving the sale of 1,000,000 cubic feet of natural gas per day have been signed by the Bickerstoff Brick Co., Brickyard, Ala., and the Kaolin Co., Kaolin, Ala., the plants being on the Alabama side of the Chattahoochee River near Columbus, Ga. In addition to the domestic load that will be served from this line, the company has contracted to supply the Tuskegee Institute with approximately 500,000 cubic feet per day and the Alabama Polytechnic Institute at Auburn with 400,000 cubic feet per day.

DELAWARE CORPORATIONS

ORGANIZED

REPRESENTED

Registered in Other States

"DIGEST" OF DELAWARE CORPORATION LAW with forms for incorporating, also pamphlet on "Stock Without Par Value under Delaware Law" on request.

NEW EDITION

(With 1929 Amendments and Annotations to date)

DELAWARE CORPORATIONS AND RECEIVERSHIPS

by Josiah Marvel

Text of law, fully annotated, with Forms for organizing Delaware Corporations

Buckram Bound 358 Pages

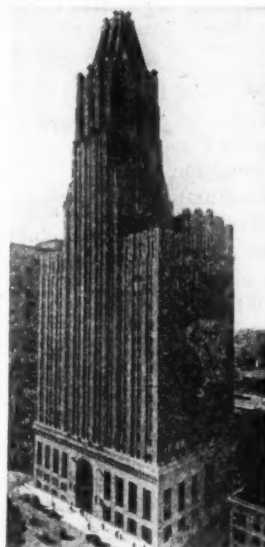
Price \$5.00 Postpaid

Corporation Service Company

318 Delaware Trust Building

Tel. Wilmington 8305

Wilmington, Delaware



Baltimore Trust Company finances shipments, both domestic and

foreign, and cooperates with exporters and importers in expanding their foreign trade.

BALTIMORE TRUST COMPANY

Total Resources \$100,000,000

MEMBER FEDERAL RESERVE SYSTEM

JOHN NUVEEN & CO.

First National Bank Building

CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

Write us if you have bonds for sale.

HAVE YOU BONDS FOR SALE?

WE BUY ALL CLASSES OF MUNICIPAL BONDS, INCLUDING CITY, COUNTY, SCHOOL, PAVING, ROAD AND DRAINAGE

The Hanchett Bond Co. Inc.

39 SOUTH LA SALLE ST., CHICAGO

Does Your Banking Connection

meet all of your business requirements?

Write us

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00

Member Federal Reserve System

AT YOUR SERVICE IN BALTIMORE

MARYLAND TRUST COMPANY

Northwest Corner Calvert and Redwood Streets

MEMBER FEDERAL RESERVE SYSTEM

\$1,000,000 Standard Oil Building

Washington, D. C.—Drawings and specifications are being prepared by Clyde N. and Nelson Friz, Baltimore, for a six-story office and garage building on E street northwest, between Second and Third street, this city, for the Standard Oil Company of New Jersey. The structure will be 71 by 335 feet, with a court in the rear above the first floor, 20 by 200 feet, of steel, concrete and stone construction and probably steam heat. The ground floor will be used for a service station, the second as offices of the company, the third, fourth and fifth floors as rental office space and the sixth floor as a garage. The cost will be about \$1,000,000.

\$2,000,000 Drainage Bonds Sold

New Orleans, La.—The final installment of \$2,000,000 of a \$9,000,000 special drainage bond issue has been sold by the Board of Liquidation, City Debt, to a syndicate headed by Halsey, Stuart & Co., Inc., Chicago, at \$2,064,160.

Wooden Cigar Box Production

The production in 1929 of 94,991,000 wooden cigar boxes, valued at \$11,257,000, is reported by the Department of Commerce, which describes this as a slight decrease in volume and value from 1927, the preceding census. Establishments engaged primarily in other lines of manufacture reported production of 5,539,237 boxes additional, valued at

\$825,945. Wages disbursed in 118 establishments in 1929 ran to \$3,597,000, for 4,360 workers in the year.

Florence (S. C.) Is Up and Doing

Practical plans for a three-year period of civic, industrial and economic development have been put into operation by the people of Florence, S. C., in a movement entitled "Full Steam Ahead," with a budget of \$15,500 a year. "Speak a good word for Florence, wherever you go," is the first principle adopted by all the citizens.

Among the features of the program are reorganization of the Chamber of Commerce; detailed plans for the development of present industries and the attraction of new ones; an advertising and publicity campaign; development of the retail trade; retail credit service; attractions for tourists and for conventions; city and county development; stimulation of agriculture; promotion of civic and cultural interests, and special activities as they may be suggested from time to time.

"Never have the business and professional men of a city been more hopeful and optimistic of future development and prosperity than those of Florence at the present time," H. A. Wheeling, secretary of the Chamber of Commerce, writes to the MANUFACTURERS RECORD. "All doubt and fear for the future prosperity of this city and section have been flung to the four winds. There is the greatest feeling of confidence today in Florence that ever has existed."

\$1,000,000 Deal for Gas and Oil Properties

Huntington, W. Va.—Seven oil and gas companies with a daily production of 200,000,000 cubic feet of gas and 3000 barrels of oil monthly, operating in West Virginia, have been purchased by the Columbia Gas & Electric Corp., New York, the deal involving \$1,000,200. The companies include the Old Colony Oil & Gas Co., Public Gas Co., McIntyre Oil & Gas Co., Aleen Oil & Gas Co., Transylvania Oil & Gas Corp., Marcum Oil Co. and the Superior Oil & Gas Co. They controlled 24,000 acres in Mingo County, 5000 in Lincoln County, 1000 in Logan County, and 17,000 in Wayne County, with about 15 producing gas wells.

North Carolina Studies Livestock

Gratifying results from a tour by a North Carolina livestock development train are reported by the Atlantic Coast Line Railroad Company, which recently conducted this enterprise in conjunction with the North Carolina State College of Agriculture and the State Department of Agriculture. At 37 points advertised, the attendance was 53,835, and the sponsors of the trip feel that "the campaign was made at the psychological time when farmers and business men are serious about a safe and sane livestock program for eastern North Carolina." Purebred dairy cattle, poultry, hogs and sheep were shown, and demonstrations were given.

**Taylor,
Wilson
& Co., Inc.**
INVESTMENT SECURITIES

WE BUY MUNICIPAL BONDS

Public officials are invited to avail themselves of our facilities for preparation of legal details.
Your inquiry receives prompt attention
701-2 Dixie Terminal Bldg. CINCINNATI

SOUTHERN TEXTILE SECURITIES

A. M. LAW & COMPANY
Established 1892
Spartanburg, S. C.

Corporate Financing Arranged
Mergers and Reorganizations Effected
Capital furnished for both new and old enterprises

WILLIAM AKERS
Long Distance and Local Phone Walnut 3186
1314-15 Atlanta Trust Co. Bldg. ATLANTA, GEORGIA

We Buy Bonds

City, County, School and Road from
Municipalities and Contractors

WRITE
THE PROVIDENT SAVINGS BANK & TRUST CO.
CINCINNATI OHIO



SCHOOL DESKS

The H. H. Andrews Co.
CHICAGO
107 So. Wabash Avenue

THE growth and development of the South and Southwest demands extensive financing and banking facilities. If you are interested in enlarging your contacts in this section, may we discuss our advertising service with you?

MANUFACTURERS RECORD



"....Mr Roosevelt arrived in *his* chaise to attend *the* meeting at *the* Bank"

This was in 1784 and among the other Gentlemen who attended that Directors' Meeting of the BANK of NEW YORK were Alexander Hamilton, Daniel McCormick, William Maxwell, Thomas Randall, Nicholas Low, Joshua Waddington, Samuel Franklin, Comfort Sands, Robert Botone, John Vanderbilt and Thomas B. Stoughton. "Good men and good views" was the expression used by Alexander Hamilton in referring to the Board, made up as it was of the most honorable Merchants and Men of Business in the City.

THE NAME OF THIS BANK is one of our proudest assets. It is the oldest bank in America retaining its original name and the first financial institution in the country to use "Trust Company" as part of its title. That its long and historic continuity shall remain unbroken is, we believe, of

genuine importance to our customers and friends.

IN KEEPING WITH THIS BELIEF the Trustees are agreed that the independent position of the Bank shall be zealously maintained. As we have been known for generations past so shall we be known to generations to come.

BANK of NEW YORK and TRUST COMPANY

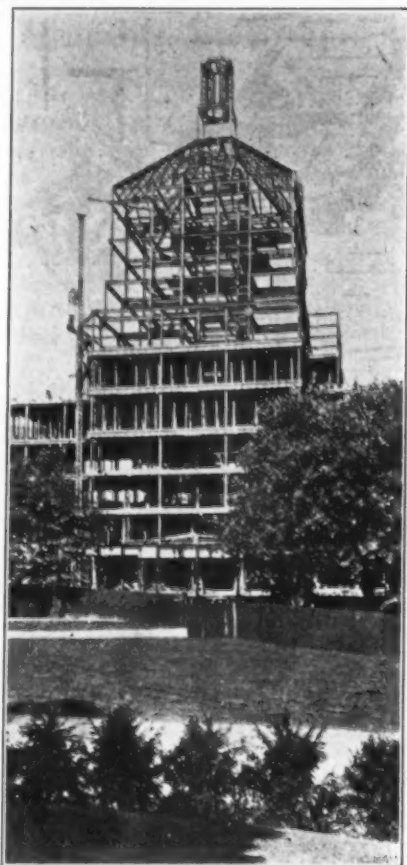
CAPITAL, SURPLUS AND UNDIVIDED PROFITS \$20,000,000

48 WALL STREET, NEW YORK

Uptown Office: Madison Avenue at 63rd Street



NEW YORK
CLEARING HOUSE
MEMBERSHIP
NUMBER ONE



Underwood & Underwood
Steel Welded Building
Homestead Hotel, Hot Springs, Va.

The fabricated

STRUCTURAL STEEL

in this well-known hotel was
furnished and erected by

AMERICAN BRIDGE COMPANY

Subsidiary of United States Steel Corporation

Manufacturers of Steel Structures
of all classes, particularly

BRIDGES and BUILDINGS

General Offices—71 Broadway, New York, N. Y.

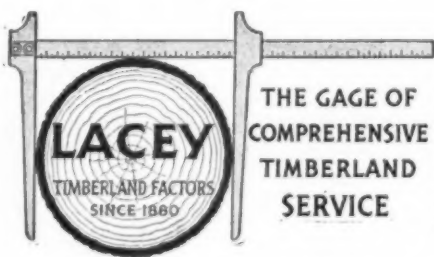
Contracting Offices in principal cities

A TIMBER REPORT

NOT JUST ANOTHER CRUISE

A LACEY TIMBER REPORT provides essential working knowledge of a property for all purposes and for permanent use.

Such a report is more complete and reliable than the usual "cruise" because it embodies the results of a forest survey based on engineering methods.



It is needed to establish sound values; to plan operations; for industrial forest management; and to realize the highest returns from timberland and all forest products.

THE JAMES D. LACEY COMPANY

1409 Barnett National Bank Building,
JACKSONVILLE, FLORIDA

Chicago, Seattle, New York, New Orleans, Memphis,
Montreal, and Vancouver.

FLORIDA

*Vegetable Growers
Benefit by*

NEW TARIFF RATES

The increased rates protect our growers in their competition with foreign grown products.

Plans for the 1930-31 early vegetable crops should be made *now*.

In the trucking section of the lower East Coast of Florida the Model Land Company of the Flagler System has several thousand acres of vegetable land for sale or rent at reasonable prices.

Write for information

Address:

J. W. Hoffman, *Vice-Pres.*,
Model Land Co.—Flagler System
St. Augustine, Florida

The late Henry M. Flagler and his organizations have served Florida since 1886.

\$7,500,000 Government Building

Washington, D. C.—Foundations are being laid for the \$7,500,000 House of Representatives office building and bids for the superstructure will be opened October 28 in the office of David Lynn, Capitol architect. The building will occupy a site of 90,000 square feet on the east side of South Capitol street and close to the present House Office Building. It will be of fireproof construction, 10 stories, including basement and sub-basement, and will be faced with stone. The Allied Architects of Washington, Inc., prepared plans, with T. N. Marshall as structural engineer and G. A. Weschler, mechanical engineer, all of Washington.

Speed \$1,000,000 School Construction

Little Rock, Ark.—The State Debt Board composed of Governor Harvey Parnell, Secretary of State Jim B. Higgins, State Auditor J. Oscar Humphrey and State Treasurer Ralph Koonce, has authorized the issuance of \$814,000 of state bonds to complete repayment of the state's loan of \$1,314,000 from the permanent school fund. Upon the completion of this loan, more than \$300,000 will be available to school districts for immediate construction and will speed the erection of approximately \$1,000,000 worth of new school buildings in the state. C. M. Hirst is the state superintendent of public instruction.

Contracts for University Buildings

Jefferson City, Mo.—Contracts have been awarded by the board of curators of Lincoln University, state school for negroes, for a \$250,000 educational building and a \$50,000 home economics building. The H. W. Underhill Construction Co., Oklahoma City, was the successful bidder for the general contract. Other contracts were awarded as follows: Plumbing—J. Louis Crum, Columbia, Mo.; heating and ventilating—J. B. McCarty Co., Springfield, Mo.; electrical work—Steppleman Electric Co., Jefferson City. W. B. Ittner, Inc., St. Louis, is the architect.

Road Congress to Help Business

Washington, D. C.—A beneficial influence will be exerted upon business by the Sixth International Road Congress to be held in Washington from October 6 to October 11, in the opinion of Roy D. Chapin, president of the American Organizing Commission. The Congress is being held at the invitation of the United States Government under the

auspices of the Permanent International Association of Road Congresses, Paris, and more than 60 foreign governments will send delegates. Problems of engineering, administration and financing of highways will be discussed, with other pertinent topics, including traffic regulation and varied subjects.

Bids on Barrack Buildings

Quantico, Va.—The Bureau of Yards and Docks, Navy Department, Washington, opens bids October 1 to erect four 3-story barrack buildings here, including plumbing, sewerage, drainage, water system, heating and steam distributing systems, electric light and power system, bituminous paving, etc.

Sub-Contracts on \$2,000,000 Station

Fort Worth, Tex.—The following sub-contracts have been awarded to date on the \$2,000,000 passenger station and office building being erected here for the Texas & Pacific Railway Co. and for which P. O'B. Montgomery, Dallas, is handling the general contract:

Ornamental iron and bronze, passenger elevators doors, bronze and nickel doors, windows, sash and ventilators—General Bronze Corp., Chicago
Painting and decorating—D. C. Downs, Fort Worth
Terra cotta—Atlanta Terra Cotta Co., East Point, Ga.
Granite—Texas Pink Granite Co., Marble Falls, Tex.
Terrazzo—Standard Terrazzo Mosaic Co., Tulsa, Okla.
Excavation—Vilbig Bros., Dallas
Reinforcing steel—Sheffield Steel Corp., Kansas City, Mo.
Limestone—Indiana Limestone Co., Bedford, Ind.
Structural steel—Petroleum Iron Works, Beaumont, Tex.
Double hung solid metal windows—Gilbert Manufacturing Co., Dallas
Erection of structural steel—Venable Moore, Dallas
Slab forms—Texas Flexible Form Co., Dallas
Mail chute—Cutler Mail Chute Co., Rochester, N. Y.
Dampproofing, waterproofing and caulking—A. C. Horn Co., Houston, Tex.
Metal doors and toilet partitions—Collinsville Manufacturing Co., Fort Worth
Common brick—Ferris Brick Co., Dallas
Clay tile and interlocking tile—Reliance Clay Products Co., Dallas
Light steel sash and stack—Fort Worth Structural Steel Co.
Glazed tile—Fraser Brick Co., Dallas
Alundum, rubber and other tile—Southland Tile & Mantel Co., Fort Worth
Gunite—Guinite Concrete Construction Co., Dallas
Marble—Georgia Marble Co. of Texas, Dallas.

This structure, which is about 25 per cent complete, will be 12 stories and basement, 130 by 220 feet for the first and second stories and 70 by 220 feet for the remaining stories. The company is also building a freight terminal and office building to cost about \$6,000,000, for which the Bellows-Maclay Construction Co., Dallas, was awarded general contract. The building will be 8 stories, 610 by 100 feet, of reinforced concrete, steel, brick and stone. Wyatt C. Hedrick, Inc., Fort Worth, is the architect for both structures.

WILL BUILD HIGH VOLTAGE LINE

Power Company Plans Work for Farmers on 70-Mile Right-Of-Way

Pine Bluff, Ark.—The Arkansas Power and Light Co. plans to clear a right-of-way this fall and winter, instead of next spring and summer as originally planned, for an additional 110,000-volt line from the Carpenter hydro-electric station to the Woodward dispatching station at Pine Bluff. This step was decided upon as a measure to provide work for farmers and other drought sufferers living near the company's right-of-way, according to H. C. Couch, president. The work, which will cover 70 miles, will be done under the supervision of C. S. Lynch, chief engineer of the company, with E. T. Brown, superintendent of construction, in direct charge.

Chambers of Commerce and Industries

The activities of local chambers of commerce in relation to new industries for their communities and new industries already in the community, also several collateral questions, will be discussed by H. Findlay French, director of the Industrial Bureau of Baltimore, before the Industrial Property division of the National Association of Real Estate Boards, at Detroit, October 27 and 28. Mr. French will speak on the first day of the session on "Recent Developments in Chambers of Commerce with Respect to Location of Industries."

Big Florida Cannery to Operate

Fort Pierce, Fla.—Construction is practically complete on a big cannery being erected here for the Florida Indian River Canning Co. and machinery is expected to be installed by October 1, when the plant will begin operations. It will specialize on grapefruit, but will handle tomatoes and other vegetables, it is said, employing about 100 men and women. The company has purchased 2,000,000 cans and has contracted for the shipment of 30,000 cases abroad.

Bids Asked on Two Bridges

Tallulah, La.—The Board of Commissioners, Fifth Louisiana Levee District, F. H. Schneider, president, and R. K. Boney, secretary, open bids September 24 for construction of two bridges over Bayou Roundaway diversion canal in Madison Parish. Proposals will be received on both steel and timber structures.



PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close October 15, 1930.

DEPARTMENT OF INTERIOR, Washington, September 15, 1930. Sealed proposals in duplicate will be received at the Department until 2 o'clock p. m., Wednesday, October 15, 1930, for furnishing all labor and materials for installing complete at Saint Elizabeths Hospital, Washington, D. C., one boiler, superheater, economizer and stoker, together with brick setting, piping, breeching, etc., in accordance with specifications, copies of which may be obtained from the Superintendent, Saint Elizabeths Hospital, or the Chief Clerk of the Department. The right is reserved to reject any or all bids, waive technical defects, or to accept one part and reject the other as the interests of the Government may require. Proposals must be marked "Proposals for installing boiler, superheater, economizer and stoker at Saint Elizabeths Hospital," and be addressed to the Secretary of the Interior, Washington, D. C. JOHN H. EDWARDS, Assistant Secretary.

Bids close October 7, 1930.

DEPARTMENT OF INTERIOR, Washington, D. C., September 9, 1930. Sealed bids in duplicate, subject to the conditions contained herein, will be received until 2 P. M., Tuesday, October 7, 1930, and then opened, for (1) Furnishing all labor and materials for performing all work for the construction (including all mechanical equipment) of Building No. 1, and for Buildings Nos. 2 and 3 of the Women's Dormitory group at Howard University, Washington, D. C. This work will include excavating, reinforced concrete construction, brick work, stone work, floor and wall tile, miscellaneous iron and steel work, slate and metal roofing, lathing and plastering, carpentry, electric elevators, plumbing, heating, electrical installation, finish grading, concrete walks and landscaping. (2) Kitchen equipment, furniture, shades, draperies, etc., furnished and installed. Proposals will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract, and in making awards the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. Separate and distinct appropriations having been made for dormitory No. 1 and for dormitories Nos. 2 and 3, it will be necessary, in order to avoid any violation of Sections 3678 and 3733 of the Revised Statutes, to invite bids and enter into contracts which will specify the consideration for dormitory No. 1 separate and apart from the consideration for dormitories Nos. 2 and 3. As contractors may be able to make a better price to the Government if assured of the contract for the whole three buildings, there is no objection to having bidders submit bids for the two projects separately and, also, to state bid prices respectively for the two projects based on an award for all three buildings. It is desired that these buildings be completed at the earliest practicable date and therefore time will be considered an element in awarding such contracts. At the discretion of the Secretary, drawings and specifications may be obtained upon application to the Department. A certified check in the sum of \$100, payable to the Treasurer of the United States, is required as security for safe return of the drawings and specifications within ten days after the date of opening proposals. Each bidder must accompany his proposal with detailed financial statement of his construction organization. The Government reserves the right to reject any or all bids or waive technical defects. The Government also reserves the right to award the contracts for these buildings either as separate contracts for each of the two projects to separate bidders, or as separate contracts for the two projects combined under one bid to one bidder. Envelopes containing bids must be sealed, marked "Bid for construction, equipment and furnishing of women's dormitory building 1 and buildings 2 and 3, Howard University, Washington, D. C., to be opened October 7, 1930," and addressed to "The Secretary of Interior, Room 6119, Interior Department Building, Washington, D. C." John H. Edwards, Assistant Secretary of Interior.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close October 7, 1930.

U. S. Engineer Office, Memphis, Tenn. Sealed bids, in duplicate, will be received here until 2 P. M., October 7, 1930, and then opened, for constructing and delivering float at Memphis, Tenn., two steel hull pile-drivers. Information on application.

Bids close October 7, 1930.

U. S. Engineer Office, 300 Custom House, Baltimore, Md. Sealed bids will be received here until 3 P. M., Eastern Standard Time, October 7, 1930, and then publicly opened, for dredging approximately 1,113,232 cubic yards of material in the entrance to and through Craighill section and the Craighill-Cutoff angle and approximately 192,635 cubic yards in the Ferry Bar section of channels leading to Baltimore, Md.

Bids close October 2, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., Sept. 4, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m., Oct. 2, 1930, for furnishing all labor and material required for remodeling toilet rooms, new hot-water tank, etc., in the U. S. post office, ct. h. and cu. h., Wheeling, W. Va. Drawings and specifications may be obtained from the custodian at the U. S. post office, ct. h. and cu. h., at Wheeling, W. Va., or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close September 24, 1930.

Bridges

BOARD OF COMMISSIONERS FIFTH LOUISIANA LEVEE DISTRICT

Tallulah, La., August 23, 1930. Sealed proposals will be received at the Office of the Board of Commissioners of the Fifth Louisiana Levee District, Tallulah, Louisiana, up to 11 A. M. Wednesday, September 24, 1930, for the construction of two bridges over the Bayou Roundaway Diversion Canal, in Madison Parish, Louisiana.

Proposals will be received on both steel and timber structures.
Deposit required, Five Hundred (\$500.00) Dollars.

Bond required, one-half the cost of the work.

The Board of Commissioners reserves to themselves the right to reject any or all bids, or to award the contract to the best interest of the district.

Plans and specifications may be had on application to the Board of State Engineers, 207 New Orleans Court Building, New Orleans, Louisiana; or to the undersigned.

F. H. SCHNEIDER, President,
Board of Commissioners,
Fifth Louisiana Levee District.
R. K. BONEY, Secretary,
Board of Commissioners,
Fifth Louisiana Levee District.

Bids close September 23, 1930.

Roads and Bridges

Charleston, W. Va.

Sealed proposals will be received by the State Road Commission of West Virginia at its office in Charleston, W. Va., until ten o'clock A. M. Tuesday, September 23rd, 1930, and said proposals will be publicly opened and immediately read thereafter, for the construction of the following projects on State Roads:

UPPER LANDGRAFF BRIDGE NO. 1246—PROJECT 2048-C—McDowell County—Three 50-foot Steel I Beam superstructure on Concrete substructure. Both to be let in one contract. Certified check \$1000.00.

LAUREL BRIDGE NO. 1209—PROJECT 3431—Ritchie County—Ashlar Masonry substructure only. Two abutments and two piers. Certified check \$1000.00.

OXBOW BRIDGE NO. 1210—PROJECT 3431—Ritchie County—Ashlar Masonry substructure only. Two abutments. Certified check \$1000.00.

PROJECT 3221—Berkeley County—PROJECT 3026—Jefferson County—Fifteen miles of the Martinsburg-Charles Town Road for widening with stone base and modified bituminous macadam. Certified check \$3200.00.

PROJECT 145-C—Doddridge County—0.93 mile of the Northwestern Turnpike for grading and paving with cement concrete. Certified check \$1800.00.

PROJECT 185-A—Doddridge County—2.4 miles of the Northwestern Turnpike for grading and paving with cement concrete. Certified check \$4000.00.

PROJECT 3404-B—Doddridge County—5.25 of the West Union-Troy Road for grading and draining. Certified check \$3200.00.

PROJECT 77—Greenbrier County—Ranelle-Rupert Road. Three culverts and approaches. Certified check \$600.00.

PROJECT 181-A—Hancock County—4.0 miles of the New Cumberland-Chester Road for grading and draining. Certified check \$4000.00.

PROJECT 3413—Jackson County—12.5 miles of the Ripley-Spencer Road for grading and draining. Certified check \$7500.00.

PROJECT 3463-B—Lincoln County—6.0 miles of the Yawkey-Alum Creek Road for grading and draining. Certified check \$4400.00.

PROJECT 2222—Monongalia County—3.0 miles of the Morgantown-Halleck-Grafton Road for retread surfacing. Certified check \$750.00.

PROJECT 3409—Monroe County—3.9 miles of the Sweet Springs-Virginia State Line Road for shale surfacing. Certified check \$650.00.

PROJECT 3090—Pocahontas County—5.0 miles of the Durbin-Randolph County Line Road for grading and paving with stone base and retread surface. Certified check \$6000.00.

PROJECT 3479—Taylor County—5.5 miles of the Grafton-Halleck-Morgantown Road for grading and draining. Certified check \$3600.00.

Proposals will be received only upon State standard forms, in accordance with plans, specifications and estimates of quantities therefor, which standard form, specifications and estimates may be obtained from the office of the District Engineer within whose territory the proposed construction is located, or from the office of the State Road Commission in Charleston, at both of which places plans for projects may be examined.

Each proposal must be accompanied by a certified check for the amount above noted.

The award of contract for the above construction will be withheld until the Commission has received official notice from the County that all rights-of-ways have been arranged for.

The right is reserved to reject any or all proposals.

STATE ROAD COMMISSION OF WEST VIRGINIA.

GEORGE E. WHITE,
Secretary.

Bids close October 7, 1930.

U. S. Engineer Office, Memphis, Tenn.—Sealed bids, in duplicate, will be received here until 2 P. M., October 7, 1930, and then opened, for constructing and delivering, afloat at Memphis, Tenn., one steel hull grader derrickboat. Information on application.

Bids close September 24, 1930.

Concrete Highway

Liberty, Texas.
Sealed bids will be received at the office of the County Clerk of Liberty County, Liberty, Texas, until 10 o'clock A. M. Wednesday, September 24, 1930, for the construction of 8.2 Miles of Concrete Pavement on Raywood-Hull Road-County Project.

Work	Quantity	Unit
Concrete Pavement-Water	86,000	Sq. Yds.
Cement Ratio	250,000	Pounds
Reinf. Steel for Pavement	86,000	Sq. Yds.
Subgrade	120	Cu. Yds.
Concrete-Small Structures	4.0	Cu. Yds.
Concrete-Bridge Brackets	21,000	Pounds
Reinforced Steel (Structures)	12,000	Cu. Yds.
Common Roadway Excavation	18,000	Sta. Yds.
Overhaul	2,000	Cu. Yds.
Borrow	10,000	Cu. Yds.
Dry Channel Excavation	428	Stations
Finishing Roadway	3	Acres
Clearing	2	Acres
Grubbing	538	Cu. Yds.
Excavation for Culverts	1,000	Yd. Qtrs.
Shell Haul First Quarter		

Plans and Specifications and all necessary information may be seen at the office of the County Engineer, G. A. Bracher, at Liberty, Texas.

Certified check, made out to Judge C. R. Wilson, equal to 5 per cent of bid, must accompany each proposal. The county reserves the right to reject any or all bids or to accept any bid deemed advantageous to it.

Dated this 14th day of August, 1930.
C. R. WILSON, County Judge.

Bids close September 23, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building five sections of State Highway as follows:

Baltimore City, Contract No. BC-96-74—One section of State Highway along Moravia Avenue, from Belair Road to Harford Road, a distance of 0.91 mile (sheet asphalt).

Prince George's County, Contract No. P-138-34—One section of State Highway from Silver Hill to Suitland, a distance of 1.17 miles (concrete).

Prince George's County, Contract No. P-139-32—One section of State Highway along the Cheverly Road, from the Landover Road to Tuxedo, a distance of 1.2 miles (alternate bids for resurfacing with hot and cold bituminous mixtures).

Prince George's County, Contract No. P-140-34—One section of State Highway from the River Road to Tuxedo, a distance of 0.9 mile (penetration macadam resurfacing).

Prince George's County, Contract No. P-141-32—One section of State Highway along Main Street, in Laurel, from the Baltimore-Washington Boulevard toward Scaggsville Bridge, a distance of 0.6 mile (concrete shoulders).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 23rd day of September, 1930, at

which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 9th day of September, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close November 4, 1930.

Notice for Proposals on

Utilities

Morehead City, N. C.

Sealed proposals will be received by the City of Morehead City, North Carolina, at Seven (7.00) o'clock P. M. on November 4th, 1930, at the office of the City Clerk for the purchase of Electric and Water Systems now owned and operated by that city.

Should an acceptable proposal be received, this will be submitted to the voters for ratification.

A certified check in an amount of not less than Five Thousand (\$5,000.00) Dollars is required, and the right is reserved to reject any or all proposals.

HON. K. P. B. BONNER, Mayor

Further information may be obtained from the undersigned:

UTILITIES ENGINEERING &
MANAGEMENT COMPANY,
917 Johnston Building,
Charlotte, N. C.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

FOR SALE—5000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on request.

W. P. HARLEY, Bowling Green, Ky.

ROCK QUARRY

FOR SALE—16 acre rock quarry, Irmo, S. C., on railroad. Address
A. C. WINGO,
3005 Columbia Avenue, Columbia, S. C.

TIMBER AND TIMBER LAND

SOUTH CAROLINA TIMBER FOR SALE. Thirty-five million feet on railroad and paved highway and very near deep water port. Tupelo and Red Gum. Price \$190,000.00. Reasonable terms.

Five million feet on highway; Pine, Gum and Maple. A bargain at \$10,000.00. Cash. Address P. O. Box 2884, St. Petersburg, Fla.

HARDWOOD LUMBER

TO FORWARD LOOKING Radio or Furniture Manufacturers: Hardwood Lumber prices are low now, but don't overlook the point that this condition is TEMPORARY. An opportunity is offered to secure a steady FUTURE supply of Southern Hardwoods at MANUFACTURING COST. INSURE your SUPPLY and assure yourself of LOW COST. Address No. 9040, care of Manufacturers Record, Baltimore, Md.

FARM, FRUIT AND TRUCK LANDS

LOUISIANA

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 25c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LANDS

VIRGINIA

SOUTH ISLES PLANTATION

830 acres, 450 acres farming and pasture land, about 300 acres fertile river bottoms, balance woodland and timber. Large, attractive mansion in grove of several acres handsome box wood, shrubbery, flowers and many varieties of trees. Excellent stock barn, tenant house, hog sheds and other outbuildings. Near Lynchburg in good community. Price \$44,000. Full details and illustrated catalogue of other attractive places upon request.

GEO. V. VENABLE & CO., Lynchburg, Va.

FARM, FRUIT AND TRUCK LAND

VIRGINIA

APPLE ORCHARD 15,000 TREES—Best commercial varieties, 12 years old; fine condition. Many excellent buildings and big equipment machinery and stock. Sacrificed to settle estate for 40,000; easy terms. WILDER & CO., Charlottesville, Virginia.

SOUTHERN ESTATE

FOR SALE—Beautiful Colonial Estate; ideal winter and all year round climate. MRS. ISABELLE R. BELL, "Bellemont Park," Mount Olive, North Carolina.

A GREAT OPPORTUNITY

Because of the age of the controlling stockholder, Ex-Senator Jonathan Bourne, Jr., and an indebtedness of approximately \$140,000, Carol Plantations, Satsuma orange and papershell pecan orchards and nurseries can now be purchased, subject to previous sale, for \$300,000. Over 2900 acres of land located 1½ miles from Theodore, Mobile County, Alabama, 14 miles south of City of Mobile. Traversed by Old Spanish Trail, paved highway from Mobile to New Orleans. Served by main line of L. & N. R. R., also by Mobile & Ohio R. R. at Theodore, Ala. Over a million dollars cash has been expended in acquisition, development, operation and maintenance. Orchards contain over 55,000 Satsuma orange trees, over 14,000 papershell pecan trees, over 1000 kumquat trees, varying in age from two to over 12 years. Ideal land and climate for early vegetables. Adjacent to best all-the-year fishing, game and edible, in Mississippi Sound, Mobile Bay and Gulf of Mexico. Modern buildings costing over \$40,000.

Reference, First National Bank of Mobile. For further particulars address CAROL PLANTATIONS, INC., Theodore, Ala.

SOUTHERN PROPERTY

FOR SALE—FOR LEASE—The best in Estates, Homes and Homesites on Florida's West Coast. Also inexpensive ones. J. M. CLARK, Box 991, Sarasota, Florida.

SOUTHERN HOMES

SOUTHERN HOMES
in the best city in the Carolinas, \$10,000 to \$75,000, according to size and location.
F. C. ABBOTT & CO.,
Charlotte, N. C.
32 years in Charlotte Real Estate.

HUNTING PRESERVE

UNUSUAL VALUE

Excellent location between Jacksonville and Jacksonville Beach, 12,000-acre hunting preserve, all fenced, well adapted for grazing; also good timber and turpentine value; \$8.00 an acre for prompt sale.
THE JAMES D. LACEY CO.,
1409 Barnett Building,
Phone 5-5684,
Jacksonville, Florida.

BUSINESS OPPORTUNITIES

WANTED—By experienced brick manufacturer location and part capital for plant or position in operating plant. Address No. 9043, care of Manufacturers Record.

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

SMALL MANUFACTURING ESTABLISHMENT WANTED

Must be cheap. Give full details in first letter. Address No. 9042, care Manufacturers Record, Baltimore, Md.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

FOR SALE

On Jackson Street, opposite St. Charles Hotel, 170 ft., with 2-story, 8-room home, \$6500; 62 ft. on Hendry Street, including Undertaking Building, \$7500, or all for \$12,900 cash.

P. JOHN HART REALTY CORP.,
P. O. Arcade,
Fort Myers, Fla.

FOR SALE

A profitable industry, manufacturing products of nationwide necessity, located in the best section of the South, by a client of mine, whose books I have audited for the past 18 years and which have always shown a substantial profit. Reason for selling, owner is reaching age of retirement, with no son to carry on the business. For full information address

C. L. VANN, C.P.A.,
Box 767, Charleston, S. C.

FT. LAUDERDALE (FLA.) NEEDS A FURNITURE STORE. IT HAS NONE NOW.

A growing city of 10,000 population on Florida's East Coast. A real opportunity for a furniture dealer to make money and live in Florida. We own and offer for lease on very favorable terms a four-story reinforced concrete building suitable for a furniture store. We also own and operate the daily newspaper and can cooperate. K. H. Gore Co., 209 S. La Salle St., Chicago, Ill.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,
Asheville, N. C.

INDUSTRIAL PLANTS

FOR SALE

SHEET METAL STAMPING PLANT fully equipped and operating. Sheets and angles available at mills here. Address H. McDERMOTT,
P. O. Box 42, Birmingham, Ala.

COMPLETE WOODWORKING PLANT, suitable for furniture or other wood articles. Dry kiln side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

FOR SALE—Manufacturing plant equipped for manufacture of sanitary enameled iron ware; such as bath tubs, lavatories, kitchen sinks, etc. Could readily be converted into general foundry and machine works, if desired. Well located in eastern section of middle west. Shipping facilities embrace both rail and water. Labor conditions good. Financial assistance, to some extent, could be obtained. Address No. 9044, care of Manufacturers Record, Baltimore, Md.

BANKRUPTCY SALE OF INDUSTRIAL PLANTS

THE INVESTORS' OPPORTUNITY!

In the Days of Cheap Money

LANDA INDUSTRIES

consisting of
Cotton Seed Oil Mill
Flour Mill
Grain Elevators
Corn Shelling Plant
and
Mixed Feed Plants.

TO BE SOLD FOR BENEFIT OF CREDITORS

A going concern founded in 1875, with a clientele of more than twenty to fifty years following, increased and improved since bankruptcy, located at

NEW BRAUNFELS, TEXAS, IN THE HEART AND BEAUTY SPOT OF TEXAS

A growing town in a rich agricultural section and the headquarters for one of the largest power plants in the State. The plant was profitable and its bankruptcy was not due to decline in business or to business conditions. Cannot be beaten for a year-round business. Investigate the possibilities.

For further information
communicate with
M. COPPARD, Trustee,
1021 Alamo Natl. Bldg., San Antonio, Tex.

FACTORY BUILDINGS

IN NEW ORLEANS, mill constructed building. Centrally located, 150x103; 15,500 sq. ft. reinforced concrete floor, 24 ft. clear headspace, suitable Factory or Heavy Warehouse Storage. On switchtrack. Rent or Sell. SAXTON HARDWARE CO., New Orleans.

FOR SALE OR RENT

Factory building, with clear span of 65x160 plus wings, for office and packing; well lighted, wired for light and power, rest room and city water; main line A. C. L., side track, spur if wanted. On fine system of hard roads, ten miles from water transportation; fine for packing house or cannery.
E. W. HENCK,
Longwood, Fla.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

FOR SALE—At Gadsden, Ala., the most beautiful industrial site in the South; 100 acres, 100 more acres available, 1332 feet of river front, unlimited supply of water, fine core sand bed; correspondence confidential. A. L. GREEN, P. O. Box 379, Gadsden, Ala.

PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

FREE "PATENT PARTICULARS"
Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services Suite M 629 F, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. **PATENTS, TRADEMARKS, COPYRIGHTS.** Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS
Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

AGENCIES WANTED

SALES REPRESENTATIVE—Long and extensive acquaintance with mayors, city managers, cotton mill owners and superintendents, South Carolina highway commissioners, contractors and engineers in South Carolina desires additional clients; salary or commission; highest references. Address Lewis M. Clyburn, Box 388, Lancaster, S. C.

SALES REPRESENTATIVE—Large and valuable acquaintance with foundries, stove manufacturers, Coal mines and supply houses in entire South wishes immediate connection; salary or commission. Highest references. Address W. J. BACH, 1139 So. 14th Street, Birmingham, Ala.

REPRESENTATIVES WANTED

IF YOU HAVE a following among steam boiler operators and are not afraid to work you can make good money by selling our Boiler Compounds on commission basis. We make water analysis and guarantee results on our Water and Metal Treatments. Write for particulars.
SOUTHERN PRODUCTS CORPORATION,
New Orleans, La.

SITUATIONS WANTED

CIVIL ENGINEER, 1930 graduate, wants job, has had about two years field and construction experience; will go anywhere. P. O. Box 1562, Sta. A, Chattanooga, Tenn.

MEN WANTED

WANTED—STONE SETTING FOREMAN for a large job.
J. J. McDEVITT COMPANY,
505 Builders Building Charlotte, N. C.

A PROGRESSIVE and conservative manufacturing concern in Kansas City, Missouri, can use the services of a high-class salesman or executive, with some capital, to be used for expansion. Address No. 9041, care of Manufacturers Record, Baltimore, Md.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,
163 Downtown Bldg. Buffalo, New York



SPECIAL ADVERTISEMENTS OF GENERAL INTEREST

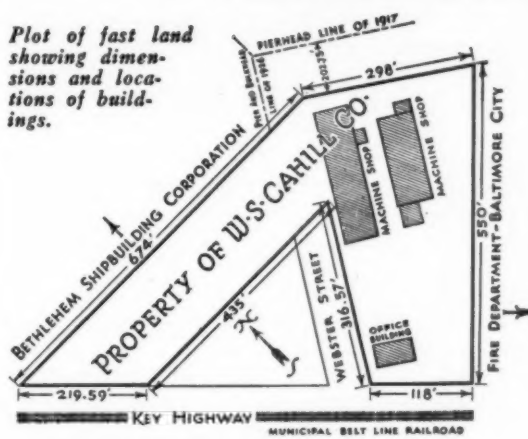


FOR SALE *Complete Water Front Property* *As an Entirety*



Including all Real Estate, Buildings and Equipment

Plot of fast land
showing dimen-
sions and loca-
tions of build-
ings.



Fee simple water front property, situated in the harbor of Baltimore City. Five minutes' ride to center of city. Municipal Belt Line Railroad in front of property on Key Highway. Approximately $4\frac{1}{2}$ acres of fast land and 2 acres riparian rights.

Property of Bethlehem Shipbuilding Corporation adjoining on the North. Property of Fire Department, Mayor and City Council of Baltimore City, adjoining on the Southeast.

For further information, address

W. S. CAHILL COMPANY

Key Highway & Webster St.

BALTIMORE, MD.

Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest, creating wider markets for your products.

*Advertising rates gladly
submitted upon request*

MANUFACTURERS RECORD
Baltimore Maryland

OPPORTUNITIES

Industrial and Agricultural

The A. & W. P.—W. Ry. of Alabama and Georgia Railroads traverse a territory rich in material and potential resources. Attractive industrial sites. For information apply:

**Commercial and Agricultural
Dev. Dept.—Above Lines
Atlanta, Georgia**

WANTED

Manufacturer to buy patent on a new
Automatic Sprinkling System

MRS. LENORA SPENCER
218 Oak Street Hot Springs, Ark.



RESALE DEPARTMENT

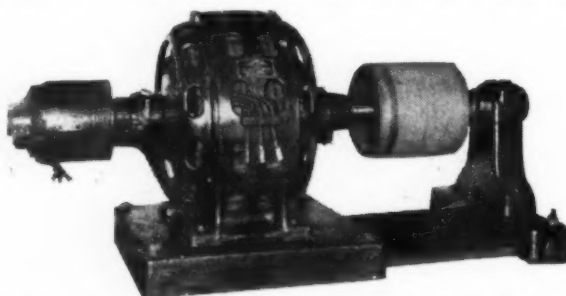
MACHINERY

EQUIPMENT

SUPPLIES



AC GENERATOR



225 KVA, 3 phase, 60 cycle, 240/480 volt, 600 RPM, Allis Chalmers 3 bearing generator with 22"x22" crowned paper pulley and direct connected exciter—as illustrated.

Just one of many units listed in Bulletin No. 38—Seventy-two pages of "ROCKFORD REBUILT" power equipment—Send for your copy, mailed free on request.

ROCKFORD POWER MACHINERY CO.

620-626 Sixth Street

Rockford, Ill.

WANTED

One G.E. Voltage Regulator Type TA Form F, two relays, Cat. No. 171837. With condenser, resistor, 220-110 Volts, 200 Watt potential transformer and brackets for panel mounting. Address all communications to

W. W. PARTEE, P. A.

E. L. BRUCE COMPANY, Memphis, Tennessee

Machine Tools

Power Equipment Boilers
Electric Motors

DELTA EQUIPMENT CO.
148 N. 3rd St. PHILADELPHIA

WANTED

One 100 KW good used Turbo Generator Set. Direct connected, 3600 RPM, 3 phase, 60 cycles, 440 Volts. Steam end designed for 150 pounds pressure. Non-condensing. To exhaust against back pressure of 10 pounds gauge. Address all communications to

W. W. PARTEE, P. A.

E. L. BRUCE COMPANY, Memphis, Tennessee

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 1/4".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20" and 24".

Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH
AND STOCKED

BERRY & NORTH 13th STS.
BROOKLYN, N.Y.

GUARANTEED

SERVICE

PRICES

IRON AND STEEL PIPE

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

BLUE PRINTING MACHINE FOR SALE

Very reasonable. One Pease Blue printing machine No. 1370. Good condition. Used very little. Address

L. M. McBEE, JR.
Woodside Building Greenville, S. C.

PIPE NEW

SECOND HAND
Overhauled and Tested
New Threads and Couplings
Established 1904

**Albert & Davidson
Pipe Corp.**

Second Ave., 50th-51st St., Brooklyn, N. Y.
Telephone Sunset 1900

Second Hand
and New
Wrought Iron

PIPE

Overhauled
Rethreaded
and Coupled

Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-197 Maapeth Ave. Brooklyn, N. Y.

Reconditioned Used Pipe

Prompt delivery from stock.
Estimates cheerfully furnished on
specification work.

MARYLAND PIPE & STEEL CORP.
Ostend and Scott Sts. Baltimore, Md.

For Sale

Entire Contents of 3 Warehouses

TOOLS
SUPPLIES
COMMISSARY EQUIPMENT
ELECTRICAL EQUIPMENT
CONSTRUCTION EQUIPMENT
TELEPHONE EQUIPMENT

in Whole or Part

Will entertain bids on entire lot
on lump sum or tonnage basis.

Susquehanna Power Co.
Conowingo, Maryland.

IF IT'S PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
34th Street and C. R. R. of N. J. Bayonne, N. J.

Let us help you sell your machinery

You may replace certain machinery in your plant this year. Let us help you sell the equipment you will no longer need by advertising it in

THE RESALE DEPARTMENT

Manufacturers Record Baltimore, Md.

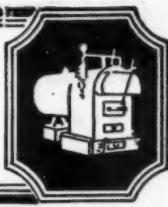


RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



FOR SALE

1-100 K.W. Goodman Generator 275 Volts D.C.
Connected to a 16"x16" McEwen Engine.
1-100 K.W. Westinghouse Generator 2200 Volts
3-Phase 60 Cycle Belted to a 15"x18" Erie-
City L.H. Side Crank Engine.
1-Ingersoll-Rand Type Twenty Motor Driven
Air Compressor 91 Cu. Ft. Per Minute.
1-6"x8" Clyde D.C.S.D. Friction Drum
Hoist Without Boiler.
2-9"x10" Clyde D.C.D.D. Friction Drum Hoist
A.S.M.E. Boilers 150 lbs. Pressure.
1-12" Morris Sand or Dredging Pump Man-
ganes Fitted Belt Driven.
1-8" Holtz Sand or Dredging Pump Belt
Driven.
Electric Motors from 1 to 150 H.P.
Bargains in Boilers, Engines, Engine Generator
Sets, Motor Generator Sets, Pumps, Derricks,
Hoists, Crushers, and Woodworking Machinery.
Let us have your inquiries.
TENNESSEE MACHINERY COMPANY
217 4th Ave. South, Nashville, Tennessee

550 VOLT A C MOTORS AT 1/2 PRICE

Modern type Allis Chalmers Alternating Cur-
rent motors; each complete with pulley, base
and starter.

No.	H.P.	Volts	Speed	Price Each
1	200	550	1800	\$475.00
6	75	550	900	390.00
1	50	550	900	245.00
1	25	550	1200	165.00
2	10	550	1200	115.00
4	5	550	1800	45.00

We will ship, without deposit, subject to your
inspection and trial before approval.

W. M. SMITH & CO.
P. O. Box 1709 Birmingham, Ala.

Low Cost Long Life UNEXCELLED SERVICE



Three strong factors that have kept
Gregory HI-GRADE-REBUILT
MOTORS and Electrical Machinery in
the lead since 1893.

Before buying consult Gregory's 80-
page illustrated Monthly Bargain Sheet.
It will save you Money, Time and
Worry. Thousands of buyers have
proved to their own satisfaction and
profit that it pays to buy

GREGORY HI-GRADE-REBUILT
Electrical Machinery

Write, phone or wire

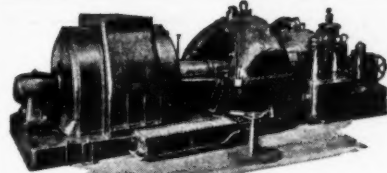


**Gregory
Electric
Company**

1601 S. Lincoln St., Chicago

REAL BARGAINS—New—Never Used—Diesels.
2-200 HP DeLaVergne, Horizontal Full Diesels,
suitable for belted or direct connected service,
at less than half regular cost.
2-66 HP Focs, 2 cyl. Vertical complete Diesel
Power Units, with radiator cooling equipment,
etc., at exactly 1/3 regular cost.

ZELNICKER IN ST. LOUIS
Rails, Equipment, Machinery, Tanks, Sheet
Steel Piling, Pipe, Etc.



10,000 KVA Turbo typical of 4 units recently
delivered and similar to the following.

**PRACTICALLY NEW 100% INTERNAL EX-
CELLENCE WESTINGHOUSE CONDENSING
TURBO UNITS COMPLETE—INSTANT SHIP-
MENT**

1-15,000 KW CW-218 Frame—1800 RPM
1-10,000 KVA CW-118 Frame—1800 RPM
1-7,500 KW CW-78 Frame—1800 RPM
1-5,500 KVA CW-74 Frame—3600 RPM
1-4,000 KVA CW-76 Frame—3600 RPM
2-1,700 KVA CW-26 Frame—3600 RPM
1-1,500 KVA CW-16 Frame—3600 RPM
(3 phase, 60 cycle, standard voltages)

A.S.M.E. CODE DESIGN BOILERS 200-225 lbs.

2-1500 H.P. Cross Drum B & W
2-2650 HP Ladd Bent Tube
2-627 HP Stirling Plant, modern stokers,
auxiliaries
2-504 HP B & W Vertical Steel headers, et al.

CONDENSERS MOTOR GENERATOR SETS

Verification and proof of new equivalent condi-
tion easily reached on personal inspection
50% to 300% saving on investment

Send us list of your requirements—or what you
have for sale

COME TO CINCINNATI



Reach the Buyers

of used machinery and equipment through the

Resale Department

An advertisement in this department will help
sell machinery being replaced or no longer
needed in your plant.

Rates on Request

MANUFACTURERS RECORD

Baltimore, Md.

GENERATOR

200 KVA, 220 volt, 3 phase, 60 cycle, Burke generator direct connected to
Filer-Stowell Uniflow engine.

BOILERS

2-500 H.P. Heine water tube, 160 lb. pressure, ASME code.
2-180 H.P. Keeler water tube, 200 lb. pressure, ASME code.
1-150 H.P. 72" x 18" Hor. ret. tubular, 150 lb. pressure, ASME code.

AIR COMPRESSOR

676 cubic foot capacity Ingersoll-Rand Imperial type 10XCB, size 13" and 9 1/4"
x 12", 2 stage air compressor, short belt idler drive with 100 H.P. synchro-
nous motor.

METAL WORKING TOOLS

12" Bending roll, belt drive, drop end housing, balance bar, power raise top
roll, dia. rolls 13" and 10".
38"-60" x 32" McCabe double spindle lathes, belt drive, taper attachment and
other equipment.
48" x 16" Lodge & Shipley engine lathe 18 speed geared head, motor drive,
quick change, rapid traverse.
42" x 42" x 12" Cincinnati planer, reversing motor drive, 4 heads, rapid tra-
verse, box table.
30" x 30" x 6" Dietrick & Harvey open side planer, 1 head on rail, 1 side
head, belt drive.
50" Rochester horizontal boring mill, 3" bar, table 42" x 22", motor drive,
rapid traverse.
24" Gould & Eberhardt shaper, cone drive.
No. 11 Brown & Sharpe plain grinder, capacity 6" x 32", belt driven.

THE O'BRIEN MACHINERY CO.

113 North Third Street

Philadelphia, Pa.

TRANSFORMERS

Our Exclusive Specialty

Save 30 to 60% On Every Purchase

We sell only high quality new or used transformers rebuilt in our own shop, tested and guaranteed to be strictly A.I.E.E. Standard—
at big price reduction.

We will repair your transformers and furnish you with temporary transformers during repairs.
We repair all makes, types and sizes of transformers.

Our experience will help you save money. Write us today.



The **ELECTRIC SERVICE CO. Inc.**
America's Used Transformer Clearing House
212 Walnut Street
Cincinnati, Ohio



We buy modern type transformers—any size—any quantity.
Wanted especially—high voltage large capacity transformers in carload shipments.



RAILROAD AND CONTRACTORS' EQUIPMENT



20 TON American Locomotive Crane

Serial No. 912. Only 3 years use. It is actually 95 % new. 8 wheels—outriggers. 48 ft. boom—A-1 operating condition throughout—Big lot of new extra parts. Will deliver anywhere in South for less than one-third of new price.

W. M. SMITH & CO.
P. O. Box 1709 Birmingham, Ala.

FOR SALE

P. & H. Model 206, $\frac{3}{4}$ -yd. Dragline.
Byers, 10-ton Caterpillar Crane, $\frac{3}{4}$ -yd. Clam.
O. & S. 22 $\frac{1}{2}$ -ton Loco. Crane 50' Boom.
16-13-yd. Western Steel Beam Dump Cars.
16-50-ton cap. All Steel Twin Hopper Cars.
75-ton, 20x26" 6-Driver Switcher, A. S. M. E.
50-ton, 15x24" 6-Driver Switcher.
92-ton, 20 $\frac{1}{2}$ x28" Mikado (2-8-2) BUILT 1922.
35-ton, 13x20" 4-Driver Sad. Tank.
56-ton, 18x24" 4-Driver Sad. Tank.
WE HAVE OVER FORTY LOCOMOTIVES IN STOCK. REBUILT AND READY ALL TYPES. 10 TO 100 TONS

Southern Iron & Equipment Co.,
Atlanta, Ga.

50 TONS
100 LB. RELAYING RAILS
150 TONS
80 LB. RELAYING RAILS
HENRY LEVIS & COMPANY
Commercial Trust Bldg. Philadelphia

RELAYING RAILS — SWITCHES
TRACK MATERIAL

THE PERRY BUXTON DOANE CO.
Pennsylvania Bldg. Philadelphia, Pa.

SHOVELS or CRANES

FOR SALE or RENT
RENTAL PAYMENTS MAY APPLY ON PURCHASE

1-Lorain 75-A, combination shovel and clamshell. Purchased new September, 1929. In almost new condition. Located in Eastern Pennsylvania.
1-30-B Bucyrus steam dragline on caterpillars equipped with 35-ft. boom, 1 cu. yd. bucket. Machine in excellent condition, priced for quick sale. Located near Chattanooga, Tenn.
1-Erie Type B steamer, 1 cu. yd. dipper. This machine is in splendid condition and is reasonably priced. Located in Central Tenn.
1-Inley Combination Clamshell and back hoe $\frac{3}{4}$ c. yd. capacity, gasoline power. In good operating condition. This machine is a real bargain. Located in Southern Tenn.
1-Type "O" $\frac{3}{4}$ yard Thew steam shovel center drive truck in splendid condition. Priced right. Can be purchased on liberal terms. Located at Brooklyn, New York.
We have both Steam and Gasoline Excavators ranging from $\frac{1}{4}$ to 1 $\frac{1}{2}$ cu. yd. capacity in various parts of the country that will be sold at extremely low prices or leased with leased payments made applying on purchase price.

CHARLES F. COHEN

LIMA, O., OFFICE:
Lima Trust Bldg.
Tel. Main 4824

NEW YORK OFFICE:
2351 Graybar Bldg.
Tel. Lexington 9934

Write or Phone at My Expense

Shovels — Cranes — Draglines

— For Sale or Lease With Option to Buy —

P&H Model 400 Dragline, $\frac{3}{4}$ yard, in good shape, ready to go. Located at Chicago plant.

Northwest Model 105 1 yard Crane. Fully reconditioned. At Hoboken plant.

P&H Model 206 $\frac{3}{4}$ yard Shovel. Thoroughly overhauled and in very good operating condition. At Hoboken plant.

Marion No. 32 1 Yard Steam Shovel on full crawlers. Ready for immediate delivery. An exceptional bargain, located at Pittsburgh.

P&H Model 400 $\frac{3}{4}$ yard Clamshell, 35 foot boom. Has been very carefully reconditioned. At Hoboken plant.

Bucyrus 31-B Steam Shovel. In excellent shape. At Hoboken plant.

Liberal Terms—Large Stock To Pick From—Write Or Wire At Our Expense

EXCAVATING EQUIPMENT DEALERS, INC.

Hoboken, N. J., Los Angeles, Berkeley, Cal., West Allis, Wis., Chicago, Ill.
1706 Willow Ave. 2248 E. 37th St. 2657 Ninth St. 5905 Greenfield Ave. 1040 W. Division St.



CATERPILLAR CRANE

P. & H. Gas Caterpillar Crane, with 38-ft. boom, in first-class condition. Serial No. 2364, Model 206. With $\frac{3}{4}$ -yd. Paige drag-line bucket.

E. E. TITUS
Jones, Commerce and South Sts. Petersburg, Va.

BYERS BEAR CAT CRANE FOR SALE

Used less than 3 months. Perfect condition.

Samler Machinery & Equipment Co.
208 W. Pratt St. Baltimore, Md.

RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material in stock near you.

WE BUY RAILS FIT TO RE-LAY
ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.
New Frogs and Switches at low prices.

FOR SALE OR RENT

3-Keystone Graders, Model No. 4.
1-10 ton Monarch 3 wheel Steam Roller.
1-4 ton Buffalo Tandem Steam Roller.
3-10 ton Buffalo Springfield Steam Rollers.
Large stock Rock Crushers, Screens and Elevators.

JOHNSON & HOEHLER
Fernwood, Del. Co. Pennsylvania

The Resale Department

offers a market to dispose of used equipment. What it has done for others can be done for you.

Let us tell you more about it

Manufacturers Record
Baltimore, Md.

RELAYING RAIL

5 Miles 30-lb.	20 Miles 70-lb.
10 Miles 40-lb.	5 Miles 75-lb.
5 Miles 50-lb.	10 Miles 80-lb.
10 Miles 60-lb.	3 Miles 90-lb.

Also other sections for southern delivery

WELLER & COMPANY
NEW AND RELAYING RAIL
BIRMINGHAM ALABAMA

RAILROAD and CONTRACTORS EQUIPMENT

40 Standard and 36" Gauge Modern Direct-connected Locomotives, in all types and weights from 8 to 75 tons.
10 Standard and 36" Gauge Geared Locomotives, all weights.
15 Steam Shovels and Locomotive Cranes of different types and sizes.
3000 Tons Relaying Rails, all sizes, on our Birmingham yards.
100 Sets 35 and 40-lb. Frogs and Switches; good as new.

Tie plates, track spikes and track bolts, immediate shipment from Birmingham stock

Your inquiries will receive careful and prompt attention

BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.



WHEN TIME MEANS MONEY ---USE HERCULES EXPLOSIVES

When the contract specifies the number of working days for a project—that's when you want to use the correct explosives in the correct manner.

For instance, the W. Grant Raub Contracting Co. was allowed 190 days to put a 6½ mile highway over Blue Mountain near Tamaqua, Pennsylvania. In much less time the job will be completed—a tribute to the contractor and to the Hercules explosives which are used exclusively in shooting 280,000 cu. yd. of rock.

This project is typical of many on which Hercules explosives are used. Our experience in developing explosives for all kinds of construction work enables us to offer a comprehensive list of explosives which will meet any blasting need, effectively and economically.

To help make selection easier, this list is printed at the right. Use the coupon-list for additional information.

HERCULES POWDER COMPANY

INCORPORATED

INCORPORATED

ALLENTOWN, PA.
BIRMINGHAM
BUFFALO
CHICAGO
DENVER
DULUTH

Wilmington
HAZLETON, PA.
HUNTINGTON, W. VA.
JOPLIN, MO.
LOS ANGELES

Delaware
NEW YORK CITY
NORRISTOWN, PA.
PITTSBURG, KAN.
PITTSBURGH, PA.

POTTSVILLE, PA.
ST. LOUIS
SALT LAKE CITY
SAN FRANCISCO
WILKES-BARRE
WILMINGTON, DEL.



THE EXPLOSIVE FOR YOUR WORK IS IN THIS LIST

☐ **HERCULES GELATIN EXTRA L. F.**—Dense and strong · plastic and water-resisting · first in fumes · the leading gelatin-type, all-purpose explosive · strengths: 30% to 90% · 190 cartridges.*

☐ **HERCULES GELATIN L. F.**—Dense and strong · plastic and water-resisting · needed only under severest conditions · first in fumes · strengths: 20% to 90% · 184 cartridges.*

☐ **GELAMITES 1 and 2**—Semi-plastic · water-resisting · bulkier than the gelatins · often replace gelatins up to, and including 60% strength at a saving in cost · No. 1 · 220, and No. 2 · 240 cartridges.*

☐ **HERCULES STRAIGHT NITROGLYCERIN L. F.**—Strong · fast · water-resisting in higher strengths · strengths: 15% to 60% · 208 cartridges.*

☐ **HERCULES EXTRA L. F.**—For general blasting · strengths: 20% to 60% · 220 cartridges.*

☐ **HERCOMITES 2 to 7**—General purpose explosives · very economical where suitable · 240 cartridges* for No. 2, to 350 for No. 7 · also Hercomite Bag packed in 12½ lb. bags.

☐ **HERCULES TORPEDO GELATIN**—Replaces liquid nitroglycerin for shooting oil, gas, and water wells · strength: 80% · 196 cartridges.*

☐ **HERCULES BLASTING GELATIN**—Water-resisting and powerful · valuable for submarine blasting, shooting gas or oil wells · 100% strength · 200 cartridges.*

☐ **HERCULES CONTRACTORS' DYNAMITE**—Low-strength explosives with strong heaving action · strengths: 5%, 10%, 15%, 20% · 5% packed in 12½ lb. bags only, others 216* cartridges.

☐ **HERCULES BLASTING POWDERS—"A"**: 8 granulations (coarse to fine) and dust—"B": 7 granulations and Herco—Herco: used in well-drill holes with Cordeau-Bickford detonating fuse—all powders packed in 25 lb. kegs.

☐ **HERCULES BLASTING SUPPLIES**—A complete series of detonators and blasting accessories.

*NOTE: Cartridge counts refer to the approximate number of 1¼" by 8" cartridges in 100 lbs. of the explosive.

HERCULES POWDER COMPANY

944 King Street, Wilmington, Delaware
Gentlemen: Please send me pamphlets describing the explosives checked.

Name.....

Company.....

Street.....

P. O.....

E-6



What Is Your Storage Space Worth?

An extra foot of height means a great deal when it comes to piling bulk material over a limited ground area.

Storing huge quantities of bulky coke for future use in very limited quarters was the problem of this large Industrial. It was found that the ERIE Multi-Power Bucket would permit the coke to be piled one foot higher than any other bucket. Thus, many more tons were stored on the same ground space.

Also—the Bucket obtained a larger load at every grab and made more trips per hour than their other buckets. Therefore, they prefer ERIE Buckets because of their flexibility, speed of operation and digging qualities.

ERIE Buckets can handle practically anything, and are adaptable to your job no matter how special it is. Send for prices, giving type and size bucket in which you are interested. Catalog of the complete bucket line gladly sent on request.

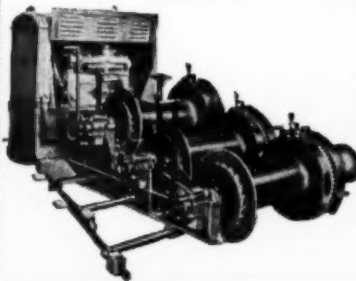
ERIE STEEL CONSTRUCTION CO.
ERIE 620 Geist Road **PENNA.**

MUNDY HOISTS

Gasoline—Electric—Steam

Standard of the World

CAR PULLERS
CABLEWAYS



TRADE MARK
MUNDY
ESTABLISHED 1869

J. S. Mundy
Hoisting Engine Co.
Frelinghuysen Ave.
Newark, N. J.

Greater Digging Power
Faster Operation
Longer Life
Guaranteed Against
Breakage

OWEN BUCKET CO.
6015 BREAKWATER AVENUE, CLEVELAND, O.

Buckets

They get
"A Mouthful at Every
Bite" and More Bites
Per Day

Hayward Buckets

A bucket for every digging and rehandling need... A size for every job.
THE HAYWARD CO., 50-52 Church St., N. Y.

WHITCOMB LOCOMOTIVES

2 to 100 TONS
 GEAR DRIVE AND OIL-ELECTRIC
 GASOLINE - DISTILLATE - DIESEL - BATTERY
 Write for Bulletins and Performance Data
GEO. D. WHITCOMB CO.
 ROCHELLE, ILLINOIS

CARS KOPPEL TRACK

for all engineering and industrial uses
KOPPEL INDUSTRIAL CAR & EQUIPMENT CO.
 NEW YORK, CHICAGO, PITTSBURGH, PHILADELPHIA, SAN FRANCISCO, KOPPEL, PA.

EASTON CARS

for every industrial purpose
 Any type to your or our design
EASTON CAR & CONSTRUCTION CO.
 10 E 40th Street, New York City
 PHILADELPHIA, PITTSBURGH, EASTON, PENNA., CHICAGO

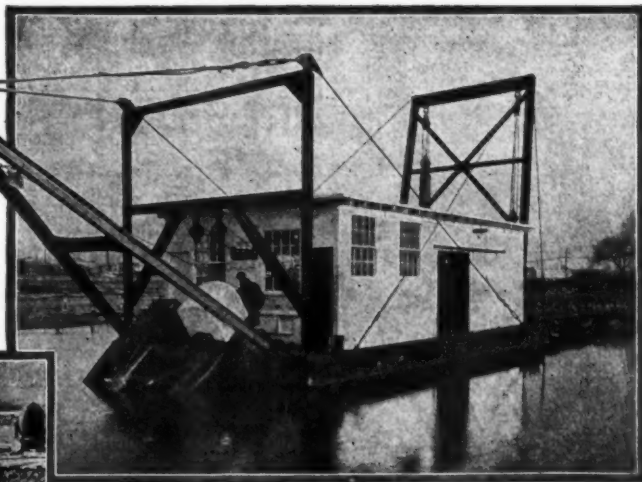
INDUSTRIAL CAR EQUIPMENT

THE ATLAS CAR & MANUFACTURING CO.
 Cleveland, Ohio

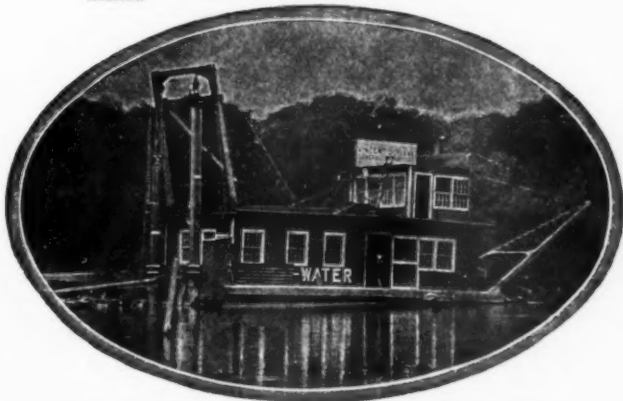
Portable Dredges



The hull of this Morris Dredge consists of two sections bolted together so that each section can be taken out of the water, put on trailers, and moved to another location.



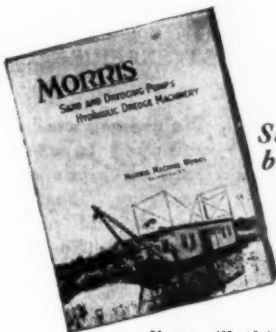
.... mounted on
sectional hulls



.... assembled with bolts

This Morris Dredge hull is put together entirely with bolts and designed so that it can be pulled out of the water and readily dismantled for removal after its work at this location was finished.

.... mounted on pontoons
or barrels



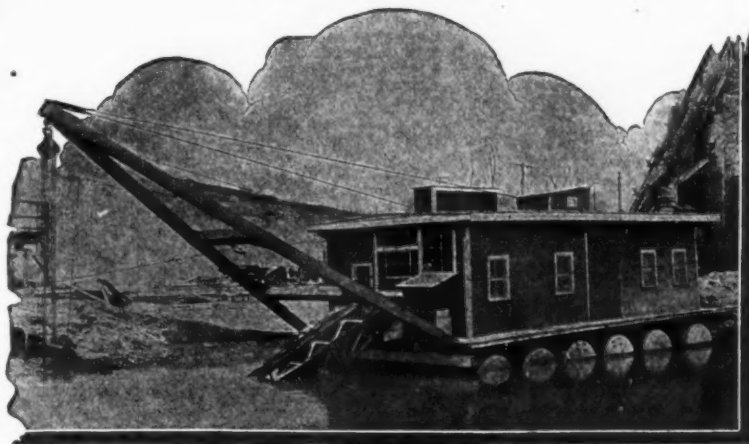
Send for
bulletins

If you will advise the service in which you are interested or the type of dredge that will be suitable for your requirements, we shall be glad to send bulletins describing the various types of Morris Dredges and Dredging Pumps.

A MORRIS Portable Dredge permits serving a great variety of operations at widely separated localities between which there may be no means of transportation by water. Various designs have been developed by the Morris Engineers for this purpose, thereby meeting every transportation and operating requirement.

When the sand and gravel producer has exhausted the material at one location, or when the general contractor has completed one dredging and filling job, their Morris Portable Dredges can readily be dismantled, transported over the shortest route to the next development work and there reassembled for further use.

This important feature, together with the many special advantages of Morris Dredging Pump construction, make an investment in Morris Equipment pay large dividends in maximum flexibility of service, speedy production, and economical operation and maintenance.



MORRIS MACHINE WORKS

Baldwinsville, N. Y.

Branches in principal cities

This Morris Dredge is mounted on cylindrical tanks which may be placed longwise or crosswise. Old barrels may be substituted for the steel tanks, and either arrangement makes an entirely suitable float which may be readily dismantled.

MORRIS

CENTRIFUGAL PUMPS



THE PRESIDENT SAYS.....

"One of our foremost policies has always been to make our plant a safe place in which to work."

"One of the big factors in maintaining this policy has been the Central Floor Plate."

"It prevents slipping."

This plate will do the same for you!



Central Iron & Steel Co.
Harrisburg, Pa.

Offices in all principal cities

If interested, send for sample and more detailed information on

CENTRAL "KNOBBY" NON-SKID FLOOR PLATES

REG. U.S. PAT. OFFICE

UNDERWRITERS' LABORATORIES INSPECTED S.A. 443

We produce in quantities to meet your requirements

SAND and WASHED GRAVEL

QUICK shipments by rail from Baltimore and North East, Md. or in scow and barge lots. Truck or rail shipments from Baltimore, Md.

The Arundel Corporation

MAIN OFFICE: ARUNDEL BUILDING
BALTIMORE, MARYLAND

Branches: New York, Norfolk and Miami



for economy and permanence in Road Building and General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC.

River St., Petersburg, Va.

FLOOR NEVERSLIP PLATES

"The Plate with Perfect Diamonds"

AMERICAN PRESSED STEEL

Commercial Trust Building—Philadelphia—Penn.



For Deep and Wide Excavations Use . . .

SAUERMAN CABLEWAYS

These machines dig, convey and elevate from pit to bin or pile in a straight-line operation.

Write for free catalog

SAUERMAN BROS., INC.
490 S. Clinton St. Chicago

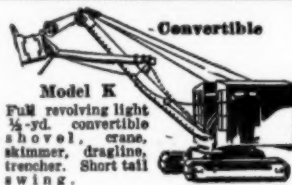
BUCYRUS ERIE

**SHOVELS
CRANES
DRAGLINES
DREDGES**

KNOWN RELIABILITY!

Bucyrus-Erie equipment is known the world over, for dependable, low-cost operation. Shovels, Draglines, Cranes—all sizes—Gas, Diesel, Electric, Gas + Air, Diesel + Air, Steam. Also Railway Cranes, Spreader Plows, etc. Write for bulletins.

BUCYRUS-ERIE COMPANY
So. Milwaukee, Wis., Evansville, Ind., Erie, Pa.



POWER SHOVELS

Cranes, Trenchers
SKIMMERS

Full or part circle

BAY CITY SHOVELS, Inc.
Bay City, Mich.

LARGEST PLANT

Filling,
Land Reclamation,
Canals
and Port Work

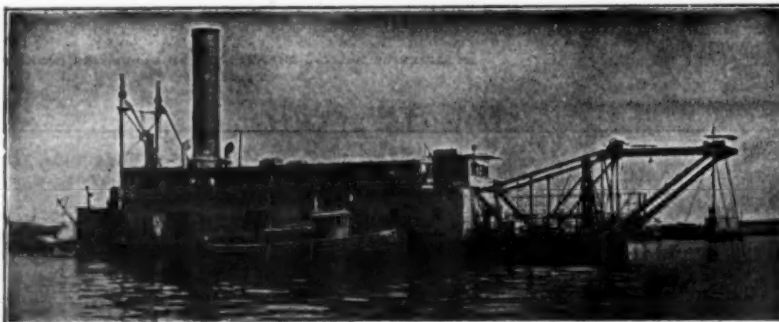
River and Harbor Improvements,
Deep Waterways
and Ship Channels.

Correspondence invited from Southern Officials and Corporate and Private Interests Everywhere.

NEW YORK
21 Park Row

DREDGING

LONGEST EXPERIENCE



We are especially equipped to execute all kinds of dredging, reclamation and port works in Southern waters.

CONTRACTORS
TO THE
FEDERAL GOVERNMENT

Atlantic, Gulf and Pacific Company

HOUSTON
Scanlan Bldg.

**LARGE CAPACITY—
RIGID CONSTRUCTION—
ECONOMICAL OPERATION—**

**UNIVERSAL PRIMARY
CRUSHERS**



**Manganese
Equipped**

For rock quarries, gravel pits, and mining industries requiring a crusher with a larger feed opening and a higher ratio of reduction than is found in the average crusher.

26 sizes of Crushers; 3 sizes of Pulverizers. Any combination outfit assembled either stationary or portable, with or without power. Capacities to 450 tons daily. Write for new catalogue to-day.

UNIVERSAL CRUSHER CO., 627 C Ave. West
Cedar Rapids, Iowa
25 years of unexcelled service

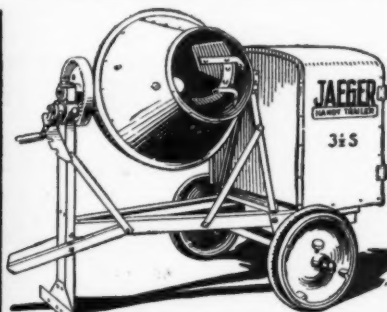
\$169⁰⁰

F.O.B. FACTORY
on STEEL

\$179⁵⁰

F.O.B. FACTORY
on RUBBER

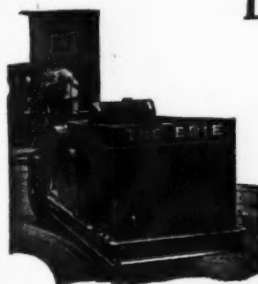
**JAEGER'S
"HANDY" 3½ S
TRAILER**



Send for new catalog, just out—
Tilters and Non-Tilters, all sizes—trailer
and power loader types.

THE JAEGER MACHINE CO.,
115 Dublin Ave. Columbus, Ohio

**Let the ERIE
Roll It!**



You save hand tamping costs
when you use the ERIE Roller.
Roll right up to curbs, headers, man-
holes, and around the curves—

The ERIE turns in a shorter ra-
dius, steers more easily and has
better clearance.

Write for Bulletin "M".

Erie Machine Shops
Erie, Pa.

ERIE ROLLERS
GAS AND STEAM SAME HIGH QUALITY

**Crushed Stone
Mascot Chatts Roofing Gravel
Asphaltic Roadway Gravel
Asphalt Filler Dust**



AMERICAN LIMESTONE COMPANY
KNOXVILLE TENNESSEE

HUBER

4 CYLINDER

MOTOR ROLLER

THE HUBER MANUFACTURING COMPANY
310 E. CENTER—MARION, O. SEND FOR CATALOG

SEAWALLS WEBER SYSTEM

MANY DIFFERENT TYPES TO MEET EVERY CONDITION.
SAFEST AND MOST PERMANENT CONSTRUCTION.

ENORMOUS SAVING OF COST

FOR COMPLETE INFORMATION WRITE TO—

SHORE-LINE BUILDERS, INC.

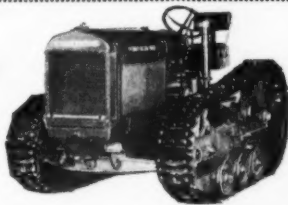
JACKSONVILLE, FLORIDA.

WEBER SYSTEM

BULKHEADS

**Lower
Hauling Costs**

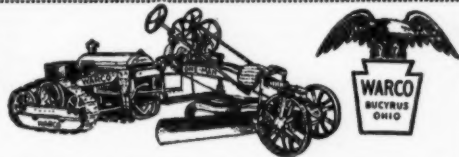
**Mean Bigger
Profits**



HERE is sure-footed power to do your work quickly
and cheaply regardless of ground or weather condi-
tions. Write for bulletin covering your work.

Trackson Company
FULL-CRAWLERS & TRACTOR EQUIPMENT
1325 South First St. Milwaukee, Wis.

**Graders
Crawlers
Scoops**



W.A. RIDDELL CO., BUCYRUS, O.

CEMENT GUN CONSTRUCTION CO.

The Original

GUNITE

Contractors

Estimates and information cheerfully given

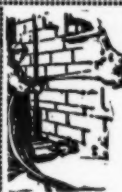
537 So. Dearborn St., Chicago, Ill.

Pittsburgh Branch

New York Branch

Oliver Bldg.

Grand Central Terminal



Classified Reference Index for Buyers

ABRASIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.)

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Hollowell Gorham & Co., Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS and SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.
Lacey & Co., Jas. D., New York, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

Chicago Pneumatic Tool Co., New York.
De Laval Steam Turbine Co., Trenton, N. J.
Equipment Corp. of America, Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Nova Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Westmerding, Pa.

AIR CONDITIONING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo.

AIRHEATERS.

Babcock & Wilcox Co., New York

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

ALUMINUM BRONZE POWDER.

Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fittings.

Vogt Mch. Co., Henry, Louisville, Ky.

ANGLE IRON-WORKING MACHINE.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

Ballinger Co., Philadelphia, Pa.
Conard & Buxby, Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Ballinger Co., Philadelphia, Pa.
Bond, Geo. Harwell, Atlanta, Ga.
Boney, Leslie N., Wilmington, N. C.
Chase, Wm., J. J., Atlanta.
Main, Inc., Chas. T., Boston, Mass.
Milburn, Heister & Co., Wash., D. C.
Moyer Co., Tilghman, Allentown, Pa.
Simmons, Inc. & Associates, R. Stanley, Washington, D. C.
Freacher & Co., Inc., G. Lloyd, Atlanta.
Strine & Co., J. E., Greenville, S. C.
Wheeler, Walter H., Minneapolis, Minn.
Widmer Engineering Co., St. Louis, Mo.
—(Golf Course, Landscape.)
Draper, E. S., Charlotte, N. C.
Spoon & Lewis, Greensboro, N. C.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

—Iron Work.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Sluicing Systems.

Allen-Sherman-Hoff Co., Phila., Pa.

—Storage Tanks (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

—Filler.

American Limestone Co., Knoxville, Tenn.

AUDITORS.

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Hollowell Gorham & Co., Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Austin Machinery Corp., Muskegon, Mich.
Harnischfeger Corp., Milwaukee, Wis.
National Equipment Corp. (Insley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Baltimore Trust Company, Baltimore, Md.
Bank of Alabama, The, Ensley, Ala.
Bank of New York & Trust Co., N. Y.
First and Merchants National Bank, Richmond, Va.
Maryland Trust Co., Baltimore, Md.
Mercantile Trust Co., Baltimore, Md.

BARGES (Steel.)

American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa.

BARS (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.
Carnegie Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Republic Steel Corp., Youngstown, Ohio
Ryerson & Son, Inc., Jos. T., St. Louis, and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.
Morris Chain Co., Ithaca, N. Y.

—(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.

Republic Rubber Co., Youngstown, Ohio.

—Dressing.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Conveyors.

Barber-Greene Co., Aurora, Ill.

BENCH LEGS.

Angle Steel Stool Co., Plainwell, Mich.

—Drawers (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BENCHES AND TABLES.

(Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corp., Youngstown, Ohio.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Drill and Reamer.)

Angle Steel Stool Co., Plainwell, Mich.

—(Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.
Erie Steel Construction Co., Erie, Pa.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain.)

Harrington Co., The, Philadelphia, Pa.

—TACKLE for Wire and Manila Rope.

Patterson Co., W. W., Pittsburgh.

BLOWERS and Exhaust Fans.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

BLOW PIPE SYSTEMS.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
Charleston Dry Dock & Machine Co., Charleston, S. C.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., E. D., Newnan, Ga.
Combustion Engr. Corp., New York, N. Y.
Hedges Walsh Weldner Co., Chattanooga, Tenn.
Lombard Iron Works & Supply Co., Augusta, Ga.
Oil City Boiler Works, Oil City, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Vogt Mch. Co., Henry, Louisville, Ky.

—(Old.)

Babcock & Wilcox Co., New York

—(Stoker Unit.)

Oil City Boiler Works, Oil City, Pa.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.
Randle Machinery Co., The, Cincinnati, O.
Zelnicke Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Babcock & Wilcox Co., New York
Harrison-Walker Refractories Co., Pittsburg.

—Tubes.

Babcock & Wilcox Co., New York
Boiler Tube Co. of America, Pittsburgh
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Steel Corp., Youngstown, Ohio.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Garraty & Co., S. G., Chicago.
Hansell Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Mercantile Trust Co., Baltimore, Md.
Nureen & Co., John, Chicago, Ill.

Provident Savings Bank and Trust Co.

Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BORING (Core.)

Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

BRASS GOODS.

Copper and Brass Research Assn., New York.
Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Face.)

Alabama Clay Prod. Co., Birmingham.

—(Fire.)

Alabama Clay Prod. Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.
Dee Co., Wm. E., Oak Hill, Ohio.
North Amer. Refractories Co., Cleveland, O.
Taylor Sons Co., Charles, Cincinnati.

—(Vitrified, Paving.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Operating Machinery.)

Earle Gear & Machine Co., Phila., Pa.

—Timber.

Amer. Crosscutting Co., Louisville, Ky.
Industrial Lumber Co., Elizabeth, La.
Kirby Lumber Co., Houston, Texas.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Crescoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Champion Bridge Co., Wilmington, O.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingersoll Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Richmond Street Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.

BUBBLERS.

Rundie-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Erie Steel Construction Co., Erie, Pa.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Dredging, Excavating, Sewer, etc.)

Erie Steel Construction Co., Erie, Pa.
Maynard Co., The, New York, N. Y.
Monaghan Mfg. Corp., Chicago, Ill.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.
Webster & Waller Mfg. Companies, Chicago, Ill.

—(Orange Peel.)

Hayward Co., The, New York, N. Y.

—(Ore Handling.)

Hayward Co., The, New York, N. Y.

Owen Bucket Co., The, Cleveland, Ohio.

Stuebner Iron Works, G. L., Long Island City, N. Y.


GET
GULF
and **GET AHEAD**
POWER—PICK-UP
MILEAGE

400° F END POINT
ANTI-KNOCK

AT NO EXTRA COST

GULF NO-NOX MOTOR
FUEL is Aviation Grade
374° F. End Point.

At the Sign of the Orange Disc
GULF REFINING CO.



Do YOUR Paper Boxes
Bespeak of Quality?

The attractiveness of the box in which your product is packed oftentimes influences a sale.

The very appearance of Old Dominion boxes bespeaks of quality, for these are "individualized" boxes, made especially for your requirements, and with your own design on them you have a quality box that commands and gets attention. Our five centrally located plants can give you prompt service on your box requirements—any type or size. Samples and quotations given without obligation.

OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C. Charlotte, N. C.

quality **OLD DOMINION**
Paper Boxes

Wilson **ROLLING PARTITIONS**



Divide Rooms the Economical Way
One Large Room or Many
Small Ones at Will

SEPARATE the class rooms or partition off the "gym", or the large hall with **WILSON ROLLING PARTITIONS**. Heat and light only areas in use. Roll out of way, overhead or sideways when not in use. Bulletin shows many uses.


Write for Catalog No. 8

THE J. G. WILSON CORPORATION
11 East 38th Street • New York City
Established 1876 Offices in all Principal Cities

TAYLOR MADE
FIREBRICK

HIGHEST QUALITY—KENTUCKY FIRECLAYS
UNEXCELLED FOR POWER PLANTS AND STEEL FURNACES
Also Sillimanite and Diaspore Refractories
THE CHAS. TAYLOR SONS CO., Cincinnati, Ohio
Manufacturers of Refractories for 63 years.
PLANTS AT CINCINNATI AND TAYLOR, KENTUCKY

High Temperature Cements

FIREBOND  **THERMOLITH**

REFRACTORIES
Fireclay High-Alumina Silica Chrome Magnesite
Acid-Proof Brick
HARRISON-WALKER REFRACTORIES CO.
World's Largest Producer of Refractories Pittsburgh, Pa.

CHARLESTON DRY DOCK & MACHINE CO.
Successors to VALK & MURDOCH CO.
MARINE AND STATIONARY BOILERS
Repairs to Steel and Wooden Vessels
8,000-ton Dry Dock—1,500 and 600-ton Marine Railways
CHARLESTON, S. C.

CHARLOTTE LEATHER BELTING CO.
Plant and Office, Charlotte, N. C.
Branch, 162 N. Clinton St., Chicago
MAKERS OF LEATHER BELT SINCE 1894

BUILDERS and Contractors.
Barstow & Co., W. S., Reading, Pa.
Copper Co., Inc., The John W., Richmond, Va.
Meyer Co., Tilghman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)
Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
—(Portable Sheet Metal.)
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.

BULKHEADS.
Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.
Trackson Co., Milwaukee, Wis.

BUSINESS METHODS.
Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CABLES (Stud Link.)
Woodhouse Chain Works, Trenton, N. J.

—(Wire (Electric).)
American Steel & Wire Co., Balto., Md.
Okonite Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)
Broderick & Bascom Rope Co., St. Louis
Lidgerwood Mfg. Co., Elizabeth, N. J.
Sauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE.
Grassell Chemical Co., Inc., Birmingham, Ala.

CAN and Box-Making Machinery (Tin.)
Bliss Co., E. W., Brooklyn, N. Y.

CAR Loaders and Unloaders.
Barber-Greene Co., Aurora, Ill.

—(Pullers.)
Webster & Weller Mfg. Companies, Chicago, Ill.

CARS (Dump, Industrial, Logging and Mine.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Southern Iron & Equipment Co., Atlanta.

—(Safety.)
Irving Iron Works Co., Long Island City, N. Y.

CASTINGS (Brass, Bronze and Aluminum.)
Mountain States Steel Foundries, Parkersburg, W. Va.

—(Chilled Iron.)
Fuller Lehigh Co., Fullerton, Penna.

—(Gray Iron.)
Fuller Lehigh Co., Fullerton, Penna.
Giamorgan Pipe & Fdry. Co., Lynchburg, Va.
National Cast Iron Pipe Co., Birmingham, Ala.
Roanoke Iron & Bridge Works, Inc., Roanoke, Va.
Salem Fdry. & Mach. Wks., Salem, Va.
U. S. Pipe & Foundry Co., Burlington, N. J.

—(Malleable Iron and Steel.)
Timken Roller Bearing Co., Canton, O.

—(Semi-Steel.)
Salem Fdry. & Machine Works, Salem, Va.

—(Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.
Deemer Steel Casting Co., New Castle, Del.

CAUSTICIZERS.
Swenson Evaporator Co., Harvey, Ill.

CEILINGS (Metal.)
Milcor Steel Co., Milwaukee, Wis.

CEMENT (High Temperature.)
Harbison Walker Refractories Co., Pittsburg, North American Refractories Co., Cleveland, Ohio.

—(Portland.)
Alpha Portland Cement Corp., Birmingham, Ala.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Assn., Chicago, Ill.

—(Guns.)
Cement-Gun Co., Inc., Allentown, Pa.

—(Machinery.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Taylor Engineering & Mfg. Co., Allentown, Penna.

CHAIN BLOCKS (See Blocks, Chain.)

CHAINS (Dredge, Quarry, Steam Shovel.)
Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.

—(High Speed Roller.)
Diamond Chain & Mfg. Co., Indianapolis.

—(Silent Drive.)
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Sprocket.)
Chain Belt Co., Milwaukee, Wis.
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Welded.)
Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opera and Theatre.)
Andrews Co., A. H., Chicago, Ill.

—(and Stools (Steel).)
Angle Steel Stool Co., Plainwell, Mich.

CHEMICAL MACHINERY.
Swenson Evaporator Co., Harvey, Ill.

CHEMICALS.
Davison Chemical Co., Baltimore, Md.
Grassell Chemical Co., Inc., Birmingham, Ala.

CHEMISTS, CHEMICAL ENGINEERS (Analytical.)
Barrow-Agass Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Meigs, Bassett & Slaughter, Phila., Pa.
Picard Laboratories, The, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Fort Worth, Texas.
Stillman & Van Stien, New York.
Wiley & Co., Inc., Baltimore, Md.

—(Consulting, Paper Industry.)
Froehling & Robertson, Inc., Richmond, Va.

CHIMNEYS (Concrete.)
Rust Engineering Co., Birmingham, Ala.

—(Radial Brick.)
Rust Engineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.
Electric Storage Battery Co., Phila., Pa.

CHLORINATORS.
Rees, S. P., Atlanta.

CIRCUIT BREAKERS.
I. T. E. Circuit Breaker Co., Phila., Pa.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING.
Draper, E. S., Charlotte, N. C.

CLOCKS (For all purposes.)
Kaiser Clock Co., L. E., Baltimore, Md.

—(Watchman's Portable.)
Davis-Paradise Watchman's Clock Corp., New York, N. Y.

Kaiser Clock Co., L. E., Baltimore, Md.

CLUTCHES (Friction.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(and Ash-Handling Mch.)
Allen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis.

Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago.
Webster & Weller Mfg. Companies, Chicago, Ill.

—(Bunkers (Cast Iron).)
Allen-Sherman-Hoff Co., Phila., Pa.

—(Tipples.)
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

COCKS (Service.)
Merco Nordstrom Valve Co., San Francisco, Calif.

COKE.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)
U. S. Pipe & Foundry Co., Burlington, N. J.

COMPRESSORS (Gasoline Extraction.)
Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Block Machinery.)
Blystone Mfg. Co., Cambridge Springs, Pa.

—(Construction (Reinforced).)
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Rust Engineering Co., Birmingham, Ala.

—(Floor Slabs.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Information Only.)
Portland Cement Assn., Chicago, Ill.

—(Mixers.)
Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

Equipment Corp. of America, Chicago, Ill.
Jaeger Machine Co., Columbus, Ohio.

—(Pipe Machinery (See Pipe Machinery, Concrete).)

—(Placing Equipment.)
National Equipment Corp. (Insley Division), Milwaukee, Wis.

—(Road Curing.)
McEverlast, Inc., Los Angeles, Cal.

—(Roofing Tile.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.

CONDENSERS.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Manitowoc Iron Works Co., Manitowish, Mich.
Swenson Evaporator Co., Harvey, Ill.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)
Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Bridge.)
Kansas City Bridge Co., Kansas City, Mo.
Snare Corp., Frederick, New York.

—(Drainage and Dredging.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

—(Electrical.)
Walker Electrical Co., Atlanta, Ga.
Warner Services Co., Knoxville, Tenn.
Webb Electric Co., Anderson, S. C.

—(Foundations and Dams.)
Calligan & Co., A. H., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.

—(General.)
Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Burkes, Inc., J. V. & E. T., New Orleans, La.
Charleston Constructors, Inc., Charleston, S. C.

Cornell-Young Co., Inc., Macon, Ga.
Copper Co., Inc., The John W., Richmond, Va.

Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.

Saville, Inc., Allen J., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.

Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.

Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Industrial Buildings.)
Angle-Blackford Co., Greensboro, N. C.

Barstow & Co., W. S., Reading, Pa.
Blair, Algernon, Montgomery, Ala.

Copper Co., Inc., The John W., Richmond, Va.

Fiske-Carter Constr. Co., Greenville, S. C.

Snare Corp., Frederick, New York, N. Y.

Stone & Webster, Inc., Boston, Mass.

Thompson & Bros., T. C., Charlotte, N. C.

Tucker & Laxton, Charlotte, N. C.

White Engineering Corp., J. G., New York.

—(Mill Village.)
Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)
Gomez & Co., P. L., Atlanta, Ga.
Jennings & Co., Floyd, Atlanta, Ga.

—(Power Piping.)
Poe Piping & Heating Co., Greenville, S. C.

—(Power Plants.)
Snare Corp., Frederick, New York, N. Y.

—(Railroad.)
Calligan & Co., A. H., Richmond, Va.
Cornell-Young Co., Inc., Macon, Ga.

—(Reinforced Concrete.)
Blair, Algernon, Montgomery, Ala.

Cement Gun Construction Co., Chicago.

Gunite Conc. & Constr. Co., Kansas City.

Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)
Fiske-Carter Constr. Co., Greenville, S. C.

Gridley Constr. Co., Lee A., Knoxville, Tenn.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrary Co., The J. B., Atlanta, Ga.

—(Rust Proofing.)
Dixie Electro Plating Co., Houston, Tex.

—(Sewerage and Waterworks.)
Gridley Constr. Co., Lee A., Knoxville, Tenn.

Hardaway Contracting Co., Columbus, Ga.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrary Co., The J. B., Atlanta, Ga.

Snare Corp., Frederick, New York, N. Y.

Tucker & Laxton, Charlotte, N. C.

—(Sprinkler System.)
Poe Piping & Heating Co., Greenville, S. C.

—(Swimming Pool.)
Rees, S. P., Atlanta, Ga.

—(Water-Works.)
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—(Machinery and Supplies. (New.)

Ray City Shovels Inc., Ray City, Mo.

Erle Steel Construction Co., Erie, Pa.

Weller & Co., Birmingham, Ala.

W-K-M Co., Inc., Houston, Texas.

—(Machinery and Supplies. (Used.)

Christian & Co., J. B., Houston, Tex.

Cohen, Chas. F., Lima, O.

Equip. Sales & Rentals Co., Pittsburgh.

Quinn, Harry P., New York, N. Y.

Johnson & Hoehler, Fernwood, Pa.

Marine Metal & Supply Co., New York.

CONTRACT WORK WANTED.
(See following classifications):

Boiler and Tank Works.

Castings.

Forgings.

Foundry and Machine Shops.

Machinery (Special).

Ornamental Iron Work.

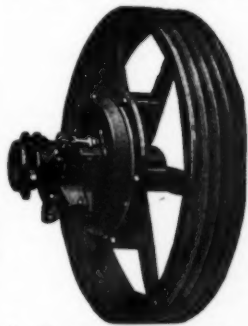
Patterns.

Sheet Metal Work.

Structural Steel and Iron.

Welding Plants.

Friction Clutches



The Schultz clutch applied to rope drives is as nearly perfect as a machine can be. It is positive in action and strong in construction and may be relied upon to pull the load.

Catalogue on request.

A. L. Schultz & Son, 1675 Elston Ave., Chicago, Ill.

BRICK—CHIMNEYS—CONCRETE

BOILER BRICKWORK

The Rust Engineering Co.

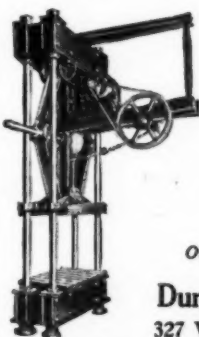
Engineers and Contractors

BIRMINGHAM, ALA.

PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO

Knuckle
Joint

BALING PRESS



60 to 500 Tons Pressure.
Motor Drive, Silent Chain, Center of Screw.

Button Control—with Reversing Switch and with limit stops up and down.

Self contained. Set anywhere you can run a wire.

Our Catalogue sent on request will tell you more about them.

Dunning & Boschert Press Co., Inc.

327 W. Water St. SYRACUSE, N. Y.

HEAVY STEEL PLATE FABRICATION OF EVERY DESCRIPTION

LET US QUOTE ON YOUR STANDARD OR SPECIAL WORK
TRAYLOR ENGINEERING & MANUFACTURING CO.
ALLENTOWN, PENNSYLVANIA

WE are the sole and only manufacturers of the machine known under the trade name and trade mark

"CEMENT GUN"

Let us aid you by giving you full information how your new construction or repair is made with this machine and its product
GUNITE

Experience Has Taught Us All Best Methods

CEMENT GUN CO., INC., Allentown, Penna.

ALLIS-CHALMERS MFG. CO.

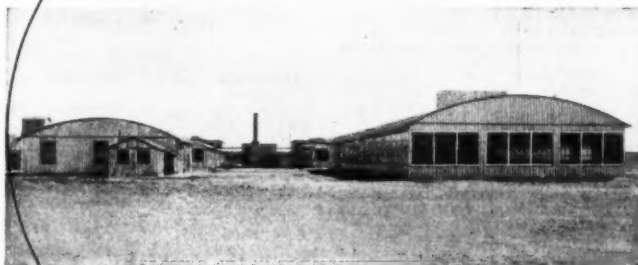
MILWAUKEE, WIS., U. S. A.

DESIGNERS AND BUILDERS OF

Steam Turbines, Electrical Machinery, Steam, Gas and Oil Engines, Centrifugal Pumps, Crushing & Cement Machinery, Etc.

MADE ENTIRELY OF STEEL

BUTLER



READY-MADE
STEEL
BUILDINGS

*Economical Shelter
for Plants Processing or Packing Foods
at Points of Food Production*

Taking the factory to the raw product is a growing trend. Particularly so in the food processing industry where the raw product often perishes quickly. Economies in transportation, in labor, in overhead costs and in plant investment are also contributing factors responsible for this decentralization.



Interior view of plant above showing commercial wall board insulation. Plaster on steel lath may also be employed.

In Butler Ready-made Steel Buildings engineers are finding the solution to the problem of sheltering such outpost operations. They completely meet all requirements—Economy of Acquiring—Economy of Installation—Economy of Maintenance—Complete Materials—Speedy and Simplified Erection—Fire Safeness to offset lack of fire protection—and Structural Qualities which make for permanence, yet which permit enlarging, taking down and re-erection.



A new booklet picturing installations of many types of Butler ready-made Steel Buildings awaits your request.

BUTLER MANUFACTURING COMPANY

1238 Eastern Avenue
Kansas City, Mo.



938 Sixth Avenue, S. E.
Minneapolis, Minn.

COST SERVICE.

Le Baron, E. T., Jacksonville, Fla.

COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.

—Mill Machinery.

Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS.

Veeder-Root, Inc., Hartford, Conn.

COUPLINGS.

Goldens' Fdy. & Mach. Co., Columbus, Ga.

—(Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

CRANES.Austin Machinery Corp., Muskegon, Mich.
Industrial Brownhoist Corp., Cleveland, Ohio.National Equipment Co. (Insley, Koehring, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Crawler.)**Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, Ohio.Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Crawling Tractor.)**Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Electric Traveling.)**Erie Steel Construction Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.**—(Full Circle Steam and Electric.)**Austin Machinery Corp., Muskegon, Mich.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Gasoline.)**Harnischfeger Corp., Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Locomotive.)**Bucyrus-Erie Co., Erie, Penna.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.**—(Material Handling.)**Bay City Shovels, Inc., Bay City, Mich.
Industrial Brownhoist Corp., Cleveland, Ohio.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The Lorain, Ohio.
Universal Crane Co., Lorain, Ohio.**—(Traveling, Hand Power.)**

Harrington Co., The Philadelphia, Pa.

CRAWLERS (Tractor.)Siddell Co., W. A., Bucyrus, Ohio
Trackson Co., Milwaukee, Wis.**CRESOTED MATERIALS.**Amer. Cresote Wks., Inc., New Orleans
Delaware Wood Preserving Co., Phila.
Savannah Cresoting Co., Savannah, Ga.**CRESOTED TIMBER.**Ayer & Lord Tie Co., Chicago, Ill.
Brown Wood Preserving Co., Louisville, Ky.**CRESOTE OIL.**Amer. Cresote Wks., Inc., New Orleans
Ayer & Lord Tie Co., Inc., Chicago.**CRESOTING (Wood Materials.)**Amer. Cresote Wks., Inc., New Orleans
Amer. Cresoting Co., Inc., Louisville, Ky.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
Delaware Wood Preserving Co., Phila.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.
Savannah Cresoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.
Walton Wood-Preserving Co., Norfolk, Va.**CROSS-ARMS (Cresoted.)**Amer. Cresote Wks., Inc., New Orleans
Amer. Cresoting Co., Inc., Louisville, Ky.
Savannah Cresoting Co., Savannah, Ga.**—(Zinc Meta Arsenite Treated.)**

Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Cresoted.)Amer. Cresote Wks., Inc., New Orleans
Amer. Cresoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Carolina Wood Preserving Co., Charleston, S. C.
Eppinger & Russell Co., New York, N. Y.
Savannah Cresoting Co., Inc., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.—(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York, N. Y.**CRUSHED STONE (Road Concrete and Ballast.)**American Limestone Co., Knoxville, Tenn.
Boxley & Co., W. W., Roanoke, Va.**CRUSHERS (Coal and Coke.)**

Fuller Lehigh Co., Fullerton, Pa.

—Rock.

Universal Crusher Co., Cedar Rapids, Iowa.

CRUSHING and Pulverizing Machinery.Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Day Pulverizer Co., Knoxville, Tenn.
Fuller Lehigh Co., Fullerton, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulverizer Co., Chicago, Ill.
Taylor Engineering & Mfg. Co., Allentown, Penna.
Universal Crusher Co., Cedar Rapids, Iowa.
W-K-M Co., Inc., Houston, Texas.**CULVERT PIPE (Cast Iron.)**Amer. Cast Iron Pipe Co., Birmingham
Cast Iron Pipe Research Assn., Chicago
U. S. Pipe & Foundry Co., Burlington, N. J.**—(Corrugated Metal.)**American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armco Culvert Mfrs. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfg. Co., Little Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.**CUTTERS (Wire Rope.)**

Leschen & Sons Rope Co., A., St. Louis.

CYLINDERS (Compressed Air, Gas.)Janney Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.**DERRICKS and Derrick Fittings.**Lidgerwood Mfg. Co., Elizabeth, N. J.
Sagen Derrick Co., Chicago, Ill.**—(Used.)**

Galer Equipment Corp., New York, N. Y.

DESKS (School.)

Andrews Co., A. H., Chicago, Ill.

—(Steel Factory.)

Angie Steel Steel Co., Plainwell, Mich.

DIFFUSERS.

Swenson Evaporator Co., Harvey, Ill.

DIGESTERS (Welded.)

Swenson Evaporator Co., Harvey, Ill.

DITCHING MACHINERY.Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The New York, N. Y.
Industrial Brownhoist Corp., Cleveland, Ohio.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Owen Bucket Co., The Cleveland, O.**DOES (Bronze.)**

Michaels Art Bronze Co., Covington, Ky.

—(Fire.)Merchant & Evans Co., Philadelphia, Pa.
Richards-Wilcox Mfg. Co., Aurora, Ill.**—(Fireproof, Air Chamber.)**

Wilson Corp., The J. G., New York.

—(Kalamain.)

Moeschl-Edwards Corr. Co., Cincinnati.

—(Rolling, Steel and Wood.)Kinneair Mfg. Co., The Columbus, Ohio.
Mahon Co., R. C., Detroit, Mich.
Moeschl-Edwards Corr. Co., Cincinnati.
Wilson Corp., The J. G., New York.**—(Steel.)**

Detroit Steel Products Co., Detroit, Mich.

—(Tubular Steel.)

Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.Austin Machinery Corp., Muskegon, Mich.
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Monaghan Mfg. Corp., Chicago, Ill.National Equipment Corp. (Koehring, Insley), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Sauerman Bros., Chicago, Ill.
Thew Shovel Co., The Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.**DREDGES (Dipper, Elevator, Hydraulic.)**Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Pa.
Ellisott Machine Corp., Baltimore, Md.
Morris Machine Wks., Baldwinville, N. Y.**DREDGING (River and Harbor Improvement.)**Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.**—Machinery.**American Steel Dredge Co., Fort Wayne, Ind.
Ellisott Machine Corp., Baltimore, Md.
Hayward Co., The, New York.**DRILLING CONTRACTORS.**Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.**DRILLS (Artesian Well.)**

Virginia Machinery & Well Co., Inc., Richmond, Va.

—(Electric.)Chicago Pneumatic Tool Co., New York
Sullivan Mch. Co., Chicago.**—(Pneumatic.)**Chicago Pneumatic Tool Co., New York
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.**DRINKING FOUNTAINS.**

Bundel-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)

Ripley Fdy. & Mch. Co., Ripley, Ohio

DRY KILNS and Equipment.

Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.

American Process Co., New York, N. Y.

DUMP TRUCK BODIES and HOISTS.

Easton Car & Construction Co., Easton, Pa.

DUSTPROOFING (Concrete.)

Sonnenborn Sons, Inc., L., New York

DYESTUFFS.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.**ECONOMIZERS (Fuel.)**

Babcock & Wilcox Co., New York

ELECTRICAL Instruments and Supplies.Adams Electric Co., Frank, St. Louis.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.**—Machinery (Generators, Motors, etc., New.)**Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Ellisott, Howard C., Miami, Fla.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Rockford Power Machy. Co., Rockford, Ill.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.**—Machinery (Generators, Motors, etc., Used.)**Delta Equipment Co., Philadelphia, Pa.
Electric Service Co., Cincinnati, Ohio.
Electrical Equip. Co., Raleigh, N. C.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago.
Nashville Industrial Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Rockford Power Machy. Co., Rockford, Ill.
Stewart Elec. Co., John A., Cincinnati.—Machinery Repairing (Motors, Generators, etc.)
Electric Service Co., Cincinnati, Ohio
Gregory Electric Co., Chicago**ELECTRIC LIGHTING.**

General Electric Vapor Lamp Co., Hoboken, N. J.

ELECTRIC SHOVELS (See Shovels.)**ELEVATOR Cables.**

Leschen & Sons Rope Co., A., St. Louis

—(Equalizers.)

Evans Elevator Equalizer Co., Bedford, Ind.

ELEVATORS (Electric.)American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.**—(Hand and Belt Power.)**American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.**—(Hydraulic.)**

American Elevator & Machine Co., Inc., Louisville, Ky.

—(Portable.)

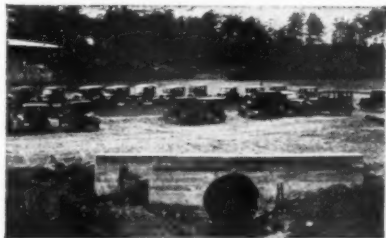
O. K. Clutch & Machy. Co., Columbia, Pa.

ENGINEERS (Airports.)MacElwain & Crandall, Inc., Cambridge, Mass.
Shaw Co., Russell B., St. Louis, Mo.**—(Appraisal.)**Ballinger Co., Philadelphia, Pa.
Batter & Kipp, Inc., Chicago, Ill.
Fay, Spofford & Thorndike, Boston, Mass.
Ford, Bacon & Davis, Inc., New York.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New YorkWhitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singewald, Inc., Atlanta
Williamson, Lee H., Charlottesville, Va.**—(Aviation.)**

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)Atlantic Bridge Co., Greensboro, N. C.
Billingsley, James W., New Orleans, La.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Howerton Engineering Co., Asheville, N. C.
Steel & Leiby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H., Minneapolis, Minn.
Whitman, Requaardt & Smith, Balto., Md.**—(Chemical.)**Barrow-Ages Laboratories, Memphis, Tenn.
Burr & Smith, New York, N. Y.
Flood & Co. Walter H., Chicago, Ill.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.**—(Civil.)**Airmap Corp. of Amer., Brooklyn, N. Y.
Batter & Kipp, Inc., Chicago, Ill.
Charlton & Davis, Ft. Lauderdale, Fla.
Fuller & McClintock, New York, N. Y.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Hills Co. George B., Jacksonville, Fla.
MacElwain & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Spoon & Lewis, Greensboro, N. C.
Spring, Charles Herbert, Greensboro, N. C.
Steel & Leiby, Knoxville, Tenn.
White Engr. Corp., J. G., New York
Whitman, Requaardt & Smith, Balto., Md.**—(Consulting.)**Airmap Corp. of Amer., Brooklyn, N. Y.
Barstow & Co., W. S., Reading, Pa.
Biggs Engr. Co., W. E., Knoxville, Tenn.
Charlton & Davis, Ft. Lauderdale, Fla.
Converse & Co., J. B., Mobile, Ala.
Engineering Service Corp., Houston, Tex.
Harza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Herty, Charles H., New York City.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Simmons, Inc. & Associates, B. Stanley, Washington, D. C.
Smith, Elroy G., Augusta, Ga.
Stillman & Van Stolen, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singewald, Inc., Atlanta, Ga.
Williamson, Lee H., Charlottesville, Va.

From a Liability to an Asset



Two years ago the site of this attractive parking ground was an unsightly marsh. An 84-inch Armco Corrugated Iron Pipe stream enclosure and grading transformed it into a conveniently situated parking area that paid for itself in two years.



Complete information on the economies of Armco stream enclosures sent upon request.

ARMCO CULVERT MFRS. ASSOCIATION
Middletown, Ohio

Or these members

Dixie Culvert Mfg. Co. Little Rock, Ark.	Western Metal Mfg. Co. Houston, Texas
The Tennessee Metal Culvert Co. Nashville, Tenn.	Louisiana Corr. Culvert Co. Baton Rouge, La.
The Dixie Culvert & Metal Co. Atlanta, Ga.	

CREOSOTED

PINE AND OAK

POLES - PILES - TIES - TIMBERS

TREATING PLANTS AND YARDS

BROWNVILLE, ALA.

LOUISVILLE, KY.

BROWN WOOD PRESERVING CO.

LOUISVILLE, KY.

Creosoted Ties, Piling, Poles and Timbers

Creosote Oil

Docks for Ocean Vessels

American Creosote Works, Inc.

New Orleans, La.

Savannah Creosoting Co., Inc.

Savannah, Ga.

Atlantic Creosoting Co., Inc.

Norfolk, Va.



POLES
TIES
POSTS
PILING
CROSS
ARMS
CROSS
TIES
LUMBER

The replacement of wood due to decay and white ant attack costs the industrial world many times more than the losses by fire. Decay and termite attack in lumber can be prevented by treatment with Creosote or ZMA. ZMA leaves the lumber clean; it can be used for both interior and exterior work, and can be painted.

Our treating engineers will be glad to assist you with your treating problems.

EPPINGER & RUSSELL Co.

13 PARK PLACE, NEW YORK CITY

Plants—Jacksonville, Fla., and Long Island City, N. Y.



Home of Grantland Rice, noted sports writer,
East Hampton, L. I.

J. Lawrence Custis, Architect; E. M. Gay, Builder

First in 1882, Still out in Front

For the roof of this attractive new summer home, the builder chose Cabot's Creosote Shingle and Wood Stains. When these stains were invented in 1882, they were the first exterior stains ever made. First in 1882, and still out in front, they now have even more vivid and lasting colors, disintegrated to colloidal fineness by the new patented Cabot Collopack Process.

Cabot's Creosote Shingle & Wood **Stains**

Use this Coupon

141 Milk Street, Boston, Mass.

Gentlemen: Please send me full information on Cabot's Creosote Shingle and Wood Stains.

Name _____

Address _____ MR-9-30

WALES WOOD-PRESERVING COMPANY
INCORPORATED

Treated and Untreated

**PILING, POLES, CROSS TIES, MINE AND
STRUCTURAL TIMBERS**

DOUGLAS FIR AND CALIFORNIA REDWOOD

P. O. Box 615

Norfolk, Va.



CREOSOTED TIMBERS

for all purposes

POLES POSTS PILING BEAMS
CROSS TIES BRIDGE MEMBERS MINE SHORING

Send for Catalogue

Taylor-Colquitt Company
Spartanburg - - - South Carolina

(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Battery & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Floyd & Lechridge, Dallas, Texas.
 Gardner & Howe, Memphis, Tenn.
 Hardaway Contracting Co., Columbus, Ga.
 Harza Engineering Co., Chicago.
 Hedrick Inc., Ira A., Hot Springs Nat'l Park, Ark.
 Lee, William S., Chas. T., Boston, Mass.
 Main, Inc., Chas. T., Boston, Mass.
 Strine & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 Wheeler, Walter H., Minneapolis, Minn.
 White Engr. Corp., J. G., New York.

(Drainage and Irrigation.)

Floyd & Lechridge, Dallas, Texas.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Hills Co., George B., Jacksonville, Fla.
 Huey, S. E. Monroe, La.

(Efficiency.)

Barstow & Co., W. S., Reading, Pa.
 Ernst & Ernst, New York, N. Y.
 Whitman, Requaardt & Smith, Balto., Md.

(Electrical.)

Battery & Kipp, Inc., Chicago, Ill.
 Engineering Service Corp., Houston, Texas.
 Hoosier Engineering Co., Chicago, Ill.
 Lee, William S., Charlotte, N. C.
 Lockwood Greene Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Mullerengren, Arthur L., Kansas City, Mo.
 Sanderson & Porter, New York, N. Y.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 Webb Electric Co., Anderson, S. C.
 White Co., Gilbert C., Durham, N. C.
 Wiley & Wilson, Lynchburg, Va.

(Electric-Light and Power Plants.)

Battery & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.
 Lee, William S., Charlotte, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Mullerengren, Arthur L., Kansas City, Mo.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.
 White Co., Gilbert C., Durham, N. C.

(Flood Control.)

Floyd & Lechridge, Dallas, Texas.
 Harza Engineering Co., Chicago.

(Forest.)

Lacey & Co., Jas. D., New York, N. Y.

(Gas.)

Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.
 Huey, S. E. Monroe, La.

(Geological.)

De Kalb, Courtenay, New York City.
 Froehling & Robertson, Richmond, Va.
 Wadleigh & Bailey, Washington, D. C.
 Withers, R. S., Jackson, Miss.

(Harbor Improvements.)

Billingsley, James W., New Orleans, La.
 Engineering Service Corp., Houston, Texas.
 Fay, Spofford & Thorndike, Boston, Mass.

(Heating.)

Battery & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Wiley & Wilson, Lynchburg, Va.

(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Floyd & Lechridge, Dallas, Texas.
 Fuller & McClintock, New York, N. Y.
 Harza Engineering Co., Chicago.
 Main, Inc., Chas. T., Boston, Mass.
 Whitman, Requaardt & Smith, Balto., Md.

(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Battery & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Harza Engineering Co., Chicago.
 Lee, William S., Charlotte, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Mees & Mees, Charlotte, N. C.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Strine & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.
 Whitman, Requaardt & Smith, Balto., Md.

(Ice and Refrigerating.)

Engineering Service Corp., Houston, Texas.

(Industrial Plants.)

Ballinger Co., Philadelphia, Pa.
 Barstow & Co., W. S., Reading, Pa.
 Battery & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Billingsley, James W., New Orleans, La.
 Charleston Constructors, Inc., Charleston, S. C.
 Conner, Older & Quinlan, Inc., Chicago.
 Converse & Co., J. B., Mobile, Ala.
 Fay, Spofford & Thorndike, Boston, Mass.
 Gardner & Howe, Memphis, Tenn.
 Greiner & Co., J. E., Baltimore, Md.
 Herty, Charles H., New York City.
 Hills Co., George B., Jacksonville, Fla.
 Lockwood Greene Engrs., Inc., New York City.

(Sanitary.)

Harza Engineering Co., Chicago.
 Whitman, Requaardt & Smith, Balto., Md.

(Sewage Disposal Plants.)

Fuller & McClintock, New York, N. Y.
 McCrary Co., The J. B., Atlanta, Ga.
 Whitman, Requaardt & Smith, Balto., Md.
 Wiedeman and Singleton, Inc., Atlanta.

(Sewerage and Waterworks.)

Conard & Busby, Burlington, N. J.
 Conner, Older & Quinlan, Inc., Chicago.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Harza Engineering Co., Chicago, Ga.
 Hills Co., George B., Jacksonville, Fla.
 Howerton Engineering Co., Asheville, N. C.
 Knowles, Inc., Morris, Pittsburgh, Pa.
 Mees & Mees, Charlotte, N. C.
 Sanderson & Porter, New York, N. Y.
 Spoon & Lewis, Greensboro, N. C.
 Tucker & Laxton, Charlotte, N. C.
 White Co., Gilbert C., Durham, N. C.
 White Engineering Corp., J. G., New York.

(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.
 Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.
 Hills Company, Geo. B., Jacksonville, Fla.
 Huey, S. E. Monroe, La.
 Lockwood Greene Engrs., Inc., New York City.
 Simmons, Inc. & Associates, B. Stanley, Washington, D. C.
 Turner, C. A. P., Minneapolis, Minn.
 Virginia Bridge & Iron Co., Roanoke, Va.
 Whitman, Requaardt & Smith, Balto., Md.

(Textile Mills.)

Ballinger Co., Philadelphia, Pa.
 Lockwood Greene Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Strine & Co., J. E., Greenville, S. C.

(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.
 Wiley & Wilson, Lynchburg, Va.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Whitman, Requaardt & Smith, Balto., Md.

EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.
 Ohio Power Shovel Co., Lima, Ohio.
 Thew Shovel Co., Lorain, Ohio.

(Dragline. See Dragline Excavators.)**(Trench.)**

Barber-Greene Co., Aurora, Ill.
 Bay City Shovels, Inc., Bay City, Mich.
 Bucyrus-Erie Co., Erie, Penna.
 Harnischfeger Corp., Milwaukee, Wis.
 Hayward Co., The, New York, N. Y.
 Monaghan Mfg. Corp., Chicago, Ill.
 Ohio Power Shovel Co., Lima, Ohio.
 Universal Power Shovel Co., Milwaukee, Wis.

EXHAUST FANS (See Blowers and Exhaust Fans.)**Systems (See Blowers and Exhaust Fans.)****EXPLOSIVES.**

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
 Hercules Powder Co., Inc., Wilmington, Del.

FACTORY Management Systems.

Ernst & Ernst, New York, N. Y.

FANS, Exhaust (See Blowers and Exhaust Fans.)**FEED-WATER HEATERS and Purifiers.**

American Water Softener Co., Phila., Pa.

FENCE POSTS (Crescoted.)

Ayer & Lord Tie Co., Chicago, Ill.

FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.
 Anchor Post Fence Co., Baltimore, Md.
 Cyclone Fence Co., Waukegan, Ill.
 Page Fence Association, Chicago, Ill.
 Stewart Iron Works Co., Cincinnati, O.

(Field and Industrial, Wire Woven.)

American Steel and Wire Co., Balto., Md.
 Chicago Pneumatic Tool Co., New York, N. Y.
 Cyclone Fence Co., Waukegan, Ill.
 Gulf States Steel Co., Birmingham, Ala.
 Page Fence Association, Chicago, Ill.
 Stewart Iron Works Co., Cincinnati, O.

FERTILIZER MACHINERY.

Raymond Bros., Impact Pulv. Co., Chicago.

FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.
 International Filter Co., Chicago, Ill.
 Rees, S. P., Atlanta.
 Roberts Filter Mfg. Co., Darby (Phila.), Pa.
 Seale & Sons Co., Wm. B., Oakmont, Pa.

FINANCING.

Akers, William, Atlanta, Ga.
 Electric Bond & Share Co., New York.
 Garraway & Co., S. G., Chicago.
 Gay & Co., W. O., New York, N. Y.

FIRE CLAY.

Alabama Clay Products Co., Birmingham.
 North American Refractories Co., Cleveland, Ohio.

FIRE EXTINGUISHERS.

Myers & Bro. Co., The F. E., Ashland, O.

FIREPROOF Building Material.

Bannon Pipe Co., Louisville, Ky.
 Robertson Co., H. H., Pittsburgh.

Doors and Shutters.

Kinnear Mfg. Co., The, Columbus, Ohio.
 Mahon Co., B. C., Detroit, Mich.
 Moeschl-Edwards Corp., Cincinnati, O.
 Richards-Wilcox Mfg. Co., Aurora, Ill.
 Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)

Leschen & Sons Rope Co., A., St. Louis.

FLANGES (Iron and Steel.)

Amer. Cast Iron Pipe Co., Birmingham.
 Dart Mfg. Co., E. M., Providence, R. I.

National Cast Iron Pipe Co., Birmingham, Ala.
 Taylor Forge & Pipe Wks., Chicago, Ill.
 U. S. Pipe & Foundry Co., Burlington, N. J.
 Vogt Mch. Co., Henry, Louisville, Ky.
 —and Flanged Fittings.
 Grinnell Co., Inc., Providence, B. I.

FLOOR (Cork Composition.)

Congoleum-Nairn Inc., Kearny, N. J.
 —(Hardwood, Maple, Oak.)
 Kirby Lumber Co., Houston, Tex.
 Nashville Hardwood Flooring Co., Nashville, Tenn.

—(Linoleum).
 Congoleum-Nairn Inc., Kearny, N. J.

—(Northern Hard Maple.)
 Holt Hardwood Co., Oconto, Wis.

—(Open Steel).
 Blaw-Knox Co., Pittsburgh, Pa.
 Irving Iron Works Co., Long Is. City, N. Y.
 Kerlow Steel Flooring Co., Jersey City, N. J.

—Covering.
 Congoleum-Nairn Inc., Kearny, N. J.

—Hardener (Concrete).
 Sonneborn Sons, Inc., L. New York.
 Stonhard Co., Phila., Pa.

—Plates and Stair Treads.
 American Pressed Steel Co., Phila., Pa.
 Central Iron & Steel Co., Harrisburg, Pa.
 Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Steel (For Concrete Culverts, Roads, Streets.)
 Blaw-Knox Co., Pittsburgh, Pa.

—Wax.
 Congoleum-Nairn Inc., Kearny, N. J.

—(Wood) Preservative.
 Stonhard Co., Phila., Pa.

FLUSH-TANK SIPHONS.

Pacific Flush-Tank Co., New York, N. Y.

FLYER PRESSERS.

Southern Spindle & Flyer Co., Charlotte, N. C.

FLYERS.

Southern Spindle & Flyer Co., Charlotte, N. C.

FORGINGS (Drop.)

Vogt Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)

Blaw-Knox Co., Pittsburgh, Pa.

FOUNDATION MASONRY.

Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.

Deemer Steel Casting Co., New Castle, Del.
 General Machine Works, York, Pa.
 Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
 Goldens' Fdry. & Mch. Co., Columbus, Ga.
 Lombard Iron Works & Supply Co., Augusta, Ga.
 Mountain States Steel Foundries Parkersburg, W. Va.

FOUNDRY Equipment and Supplies.

Chain Belt Co., Milwaukee, Wis.
 Hill & Griffith Co., The, Cincinnati, O.
 —Facings (Tale and Soapstone.)
 Hill & Griffith Co., The, Cincinnati, O.

FREIGHT RATE ADJUSTMENTS.

Allen, Charles S., New York City.

FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)

Union Tank & Pipe Co., Los Angeles, Cal.

FURNACE LININGS.

North American Refractories Co., Cleveland, Ohio.

FURNACES (Industrial.)

Combustion Engr., Corp., New York City.

—(Water-Cooled.)

Combustion Engr. Corp., New York City.
 Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.

Birmingham Galvanizing Co., Birmingham, Ala.
 Cattle & Bros., Jos. P., Philadelphia, Pa.

—Steel and Iron.

American Rolling Mill Co., Middletown, O.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Granite City Steel Co., Granite City, Ill.
 Republic Steel Corp., Youngstown, Ohio.

GALVANIZING (Cadmium Plating.)

Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)

Bessemer Galvanizing Works, Birmingham.
 Birmingham Galvanizing Co., Birmingham, Ala.
 Cattle & Bros., Jos. P., Philadelphia, Pa.
 Newport News Shipbuilding & Drydock Co., Newport News, Va.

GAS HOLDERS.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Chicago Bridge & Iron Works, Atlanta, Ga.

—Producers.

Gas-O-Flame Stove Works, Port Deposit, Md.
 Morgan Construction Co., Worcester, Mass.
 Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE.

Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)

Armco Culvert Mfrs. Assn., Middletown, O.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Dixie Culvert Mfg. Co., Little Rock, Ark.
 Louisiana Corr. Culvert Co., Baton Rouge, La.
 Tenn. Metal Culvert Co., Nashville, Tenn.
 Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.

Jenkins Bros., New York, N. Y.

GEARS.

DeLaval Steam Turbine Co., Trenton, N. J.
 Earle Gear & Machine Co., Phila., Pa.
 General Electric Co., Schenectady, N. Y.
 Woods' Sons Co., T. B., Chambersburg, Pa.

—(Worm Reduction.)

DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 General Electric Co., Schenectady, N. Y.
 Howell Electric Motors Co., Howell, Mich.
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)

Electrical Equip. Co., Raleigh, N. C.
 Gregory Electric Co., Chicago.
 Nashville Ind. Corp., Old Hickory, Tenn.
 Nussbaum & Co., V. M., Ft. Wayne, Ind.
 O'Brien Machinery Co., Phila., Pa.
 Randle Machinery Co., The, Cincinnati, O.
 Stewart Elec. Co., John A., Cincinnati.

GEOLOGISTS. (See Engineers, Geological.)

GLASS (Art.)

Binswanger & Co., Memphis, Tenn.
 Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)

Blue Ridge Glass Corp., Kingsport, Tenn.
 Hires Turner Glass Co., Philadelphia, Pa.
 Southwestern Sheet Glass Co., Okmulgee, Okla.

—(Window.)

Blue Ridge Glass Corp., Kingsport, Tenn.
 Hires Turner Glass Co., Philadelphia, Pa.
 Southwestern Sheet Glass Co., Okmulgee, Okla.

—(Wire.)

Blue Ridge Glass Corp., Kingsport, Tenn.
 Hires Turner Glass Co., Philadelphia, Pa.
 Southwestern Sheet Glass Co., Okmulgee, Okla.

GRADERS (Elevating.)

Caterpillar Tractor Co., San Leandro, Calif.

—(One Man Motor.)

Riddell Co., W. A., Bucyrus, Ohio.

GRAPHITE.

Dixon Crucible Co., Jos., Jersey City, N. J.

GRATES and Grate Bars.

Schofield's Sons Co., J. S., Macon, Ga.
 Vogt Machine Co., Henry, Louisville, Ky.

GRATING (Area, Flooring, Sidewalk.)

Bates Steel Corp., Walter, Gray, Ind.
 Blaw-Knox Co., Pittsburgh, Pa.
 Hendrick Mfg. Co., Carbondale, Pa.
 Irving Iron Works, Long Is. City, N. Y.
 Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)

American Limestone Co., Knoxville, Tenn.
 Arundel Corp., The, Baltimore, Md.
 Boxley & Co., W. W., Roanoke, Va.
 Friend & Co., Inc., Petersburg, Va.

GREASE CUPS.

Lunkensheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Electric.)

Chicago Pneumatic Tool Co., New York.

—(Gypsum, Limestone, etc.)
 Raymond Bros. Impact Pulv. Co., Chicago.

GRINDING MACHINERY (Flexible Shaft.)

Strand & Co., N. A., Chicago, Ill.

—Wheels.

Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)

National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.

Cement-Gun Co., Inc., Allentown, Pa.
 Cement Gun Construction Co., Chicago.
 Gunite Cont. & Constr. Co., Kansas City.
 Gunite Constr. Co., New York City.
 Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
 Hercules Powder Co., Inc., Wilmington, Del.

GUNS (Hydraulic.)

Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)

Blaw-Knox Co., Pittsburgh, Pa.
 Braden Steel Corp., Tulsa, Okla.
 Ingalls Iron Works, Birmingham, Ala.

HANGERS (Door, All Kinds.)

Richards-Wilcox Mfg. Co., Aurora, Ill.

—(Line Shaft.)

American Pulley Co., Philadelphia, Pa.
 Wood's Sons Co., T. B., Chambersburg, Pa.

HARBOR IMPROVEMENTS.

Arundel Corp., Baltimore, Md.
 Atlantic, Gulf & Pacific Co., New York.

HARDWARE (Door.)

Richards-Wilcox Mfg. Co., Aurora, Ill.

HEATERS (Asphalt.)

Honhorst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.)

Grinnell Co., Inc., Providence, B. I.
 Poe Piping & Heating Co., Greenville, S. C.
 Skinner Bros. Mfg. Co., St. Louis, Mo.

—Systems.

Skinner Bros. Mfg. Co., St. Louis, Mo.

HOISTING MACHINERY.

Lidgerwood Mfg. Co., Elizabeth, N. J.

HOISTS (Air Portable.)

Chicago Pneumatic Tool Co., New York, N. Y.
 Ingersoll-Rand Co., New York, N. Y.
 Sullivan Machinery Co., Chicago, Ill.

—(Chain.)

Harrington Co., The, Philadelphia, Pa.

—(Electric.)

Harnischfeger Corp., Milwaukee, Wis.
 Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.
 Mundy Hoisting Engine Co., J. S., Newark, N. J.
 Nove Engine Co., Lansing, Mich.
 O. K. Clutch & Machy. Co., Columbia, Pa.
 Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)

Clyde Iron Works Sales Co., Duluth, Minn.
 Dake Engine Co., Grand Haven, Mich.
 Equipment Corp. of America, Chicago, Ill.
 Mundy Hoisting Engine Co., J. S., Newark, N. J.
 National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
 Nove Engine Co., Lansing, Mich.
 O. K. Clutch & Machy. Co., Columbia, Pa.
 Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Hand Power.)

O. K. Clutch & Machy. Co., Columbia, Pa.

—(Steam.)

Clyde Iron Works Sales Co., Duluth, Minn.
 Dake Engine Co., Grand Haven, Mich.
 Mundy Hoisting Engine Co., J. S., Newark, N. J.
 Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)

Connors Steel Co., Birmingham, Ala.

HOPPERS (Aggregate, Measuring and Weighing.)

Blaw-Knox Co., Pittsburgh, Pa.
 Erie Steel Construction Co., Erie, Pa.

HOSE (Rubber.)

Republic Rubber Co., Youngstown, Ohio.

HOTELS.

Helms Hotel Systems, St. Louis, Mo.
 Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.

Eichleay, Jr. Co., John, Pittsburgh.

HULLS (Steel.)

American Steel Dredge Co., Fort Wayne, Ind.

HUMIDIFYING AND DRYING EQUIPMENT.

Grinnell Co., Inc., Providence, B. I.
 Skinner Bros. Mfg. Co., St. Louis, Mo.

HYDRANTS (Fire.)

Ludlow Valve Mfg. Co., The, Troy, N. Y.
 Myers & Bro. Co., The, F. E., Ashland, O.
 Vogt Brothers Mfg. Co., Louisville, Ky.
 Wood & Co., R. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)

Alabama Power Co., Birmingham, Ala.
 Central Power & Light Co., San Antonio.
 Georgia Power Co., Atlanta, Ga.
 Texas Power & Light Co., Dallas, Texas.

ICE and Refrigerating Machinery and Supplies.

Ingersoll-Rand Co., New York, N. Y.
 Vogt Mch. Co., Henry, Louisville, Ky.

INCINERATORS.

Duplex Hanger Co., Cleveland, Ohio.
 Swenson Evaporator Co., Harvey, Ill.

INCORPORATORS.

Corporation Service Co., Wilmington, Del.
 Delaware Registration Trust Co., Wilmington, Del.

INJECTORS.

Jenkins Bros., New York, N. Y.
 Randle Machinery Co., The, Cincinnati, O.

INSULATING MATERIALS.

General Electric Co., Schenectady, N. Y.
 Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.

Electric Bond & Share Co., New York.
 Gay & Co., W. O., New York City.
 Hanchett Bond Co., Inc., The, Chicago, Ill.
 Mercantile Trust Co., Baltimore, Md.
 Nuveen & Co., John, Chicago.
 Peabody & Co., Chicago.
 Provident Savings Bank & Trust Co., Cincinnati, Ohio.
 Taylor, Wilson & Co., Ins., Cincinnati, O.

IRON.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(Ingot, For Culverts, etc.)

American Rolling Mill Co., Middletown, O.

JANITOR SUPPLIES.

Clark, Lloyd T., Southern Pines, N. C.

JOINTS (Pipe.)

Leadite Co., The, Philadelphia, Pa.

JOIST HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

KETTLES (Pavers and Roofers.)

Homborst Co., Jos., Cincinnati, O.

LADDERS (Rolling.)

Myers & Bro. Co., The F. E., Ashland, O.

—(Wooden.)Dayton Safety Ladder Co., Cincinnati, O.
Patent Scaffolding Co., Chicago, Ill.**LAMPS (Incandescent.)**General Electric Vapor Lamp Co., Hoboken, N. J.
Western Electric Co., New York City.**LATH (Metal.)**

Ingalls Iron Works Co., Birmingham, Ala.

LATHES.

Sebastian Lathe Co., Cincinnati, Ohio.

LIGHTING (Factory and Mill.)

General Electric Vapor Lamp Co., Hoboken, N. J.

—Fixtures (Electric.)Benson Brass & Chandelier Works, Kansas City, Mo.
Western Electric Co., New York City.**LIME RECOVERY SYSTEM.**

Swenson Evaporator Co., Harvey, Ill.

LININGS (Flue, Fire Clay.)Lee Clay Products Co., Clearfield, Ky.
North Amer. Refractories Co., Cleveland, Ohio.
Owensboro Sewer Pipe Co., Owensboro, Ky.**—(Tube Mill.)**

Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jasper.)

Compoleum-Nalim Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.Smith & Son Co., Oscar T., Baltimore, Md.
Young & Selden Co., Baltimore, Md.**LOADING and UNLOADING MACHINERY (Portable.)**Barber-Greene Co., Aurora, Ill.
Northwest Engineering Co., Chicago, Ill.**LOCOMOTIVES (Compressed Air.)**

Porter Co., H. K., Pittsburgh, Pa.

—(Fireless Stored Steam.)

Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.**—(Industrial.)**Birmingham Rail & Locomotive Co., Birmingham, Ala.
Equipment Corp. of America, Chicago, Ill.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
Whitcomb Co., Geo. D., Rochelle, Ill.**—(Mining.)**Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.**—(Railway.)**Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
Whitcomb Co., Geo. D., Rochelle, Ill.**LOOM PICK COUNTER**

Veeder-Root, Inc., Hartford, Conn.

LUBRICANTS.Dixon Crucible Co., Jos., Jersey City, N. J.
Gulf Refining Co., Pittsburgh, Pa.**LUBRICATORS (Force Feed.)**

Lunkenheimer Co., The, Cincinnati, O.

LUMBER (Ceiling, Flooring, Siding.)Industrial Lumber Co., Elizabeth, La.
Kirby Lumber Co., Houston, Texas.**—(Creosoted.)**Amer. Creosote Wks., Inc., New Orleans, La.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago, Ill.
Carolina Wood Preserving Co., Charleston, S. C.
Delaware Wood Preserving Co., Phila.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creosote Co., Hattiesburg, Miss.
Savannah Creosote Co., Savannah, Ga.**—(Heavy Construction, Pitch, Pine, etc.)**Brooks-Scanlon Corp., Foley, Florida.
Industrial Lumber Co., Elizabeth, La.
Kirby Lumber Co., Houston, Texas.**—Yellow Pine.**

Brooks-Scanlon Corp., Foley, Florida.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

MACHINERY (Special.)Bliss Co., E. W., Brooklyn, N. Y.
Earle Gear & Machine Co., Phila., Pa.
Fernholts Machinery Co., St. Louis, Mo.
General Machine Works, York, Pa.**—and Supplies (New and Used.)**Electric Service Co., Cincinnati, Ohio.
Equip. Sales & Rentals Co., Pittsburgh, Pa.
Heineken Engineering Corp., New York, N. Y.
Marine Metal & Supply Co., New York, N. Y.
Nashville Ind. Corp., Old Hickory, Tenn.
O'Brien Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Ryerson & Son, Inc., Jos. T., St. Louis, Mo.
Seyfert's Sons, Inc., L. F., Phila., Pa.
Zelicker Supply Co., W. A., St. Louis, Mo.**MACHINE TENDERS (Steel.)**

Angle Steel Steel Co., Plainwell, Mich.

—(Tools.)Ryerson & Son, Inc., Jos. T., St. Louis, Mo.
Sebastian Lathe Co., Cincinnati, Ohio.**—(Used.)**Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Phila., Pa.**MAIL CHUTES.**

Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.)

Georgia Marble Co., Tate, Ga.

MATERIAL ELEVATORS.

National Equipment Corp. (Insley, C. H. & E.), Milwaukee, Wis.

METAL-Cutting Machinery.Earle Gear & Machine Co., Phila., Pa.
—Working Machinery.
Bliss Co., E. W., Brooklyn, N. Y.**MILL MACHINERY and SUPPLIES.**

Lombard Iron Works & Supply Co., Augusta, Ga.

MINING MACHINERY.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

MIXERS.

National Equipment Corp. (Koehring, T. L. Smith, Kwik-Mix), Milwaukee, Wis.

—(Asphalt.)

Erie Machine Shops, Erie, Pa.

—(Hot.)

Koehring Co., Milwaukee, Wis.

—(Mortar.)Chain Belt Co., Milwaukee, Wis.
Jaeger Machine Co., Columbus, Ohio.**—(Plaster.)**Blystone Mfg. Co., Cambridge Springs, Pa.
Dunning & Boeschert Press Co., Syracuse, N. Y.
Jaeger Machine Co., Columbus, Ohio.**MORTAR INGREDIENT.**

Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Western Electric Co., New York City.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**MOTOR TRUCKS.**

International Harvester Co., of America, Inc., Chicago, Ill.

NAILS (Cut.)

Reading Iron Co., Reading, Pa.

—and Spikes.American Steel & Wire Co., Balto., Md.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, Ohio.**NATURAL GAS COMPANIES.**(Offering Industrial and Commercial Opportunities.)
Arkansas Natural Gas Corp., Shreveport, La.**OIL (Fuel and Gas.)**

Gulf Refining Co., Pittsburgh, Pa.

—Cups.

Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.Georgia Iron Works, Augusta, Ga.
McLanahan Stone Machine Co., Hollidaysburg, Pa.**ORNAMENTAL BRONZE WORK.**Heath Co., J. S., Waukegan, Ill.
Michaels Art Bronze Co., Covington, Ky.**—Iron Work.**Roanoke Iron & Bridge Wks., Roanoke, Va.
Snead Architectural Iron Works, Louisville, Ky.
Southern Engineering Co., Charlotte, N. C.
Stewart Iron Works Co., Cincinnati, O.**PACKAGE SERVICE (Corrugated Paper.)**

Hinde & Dauch Paper Co., Sandusky, O.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.)Jenkins Bros., New York, N. Y.
Republic Rubber Co., Youngstown, Ohio.**PAINT (Aluminum.)**

Aluminum Co. of America, Pittsburgh, Pa.

—(Metal Surfaces.)Aluminum Co. of America, Pittsburgh, Pa.
Dixon Crucible Co., Jos., Jersey City, N. J.**—(Mill White, For Interior.)**Aluminum Co. of America, Pittsburgh, Pa.
Sonneborn Sons, Inc., L., New York, N. Y.**—(Preservative.)**Cabot, Inc., Samuel, Boston, Mass.
Foster Co., Benjamin, Philadelphia, Pa.**PANELBOARDS.**

Adam Elec. Co., Frank, St. Louis, Mo.

PAPER BOXES (Corrugated, Shipping.)

Hinde & Dauch Paper Co., Sandusky, O.

PARTITIONS (Metal, Folding, Rolling.)Kinnear Mfg. Co., The, Columbus, Ohio.
Lupton's Sons Co., David, Phila., Pa.**—(Sectionfold, Rolling, Wood.)**

Wilson Corp., The, J. G. New York, N. Y.

PATENT ATTORNEYS.Buck, Sterling P., Washington, D. C.
Coleman, Watson E., Washington, D. C.
Eaton, Paul B., Charlotte, N. C.
Sarnett, Edward C., Washington, D. C.
Seymour & Bright, Washington, D. C.**PATTERNS (Drawing, etc.)**

Hass Pattern Co., A. W., Atlanta, Ga.

PAVING Blocks (Creosoted Wood.)

American Creosote Works, New Orleans, La.

—(Brick.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—Mixers.

National Equipment Corp. (Koehring, T. L. Smith), Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Smith Co., S. Morgan, York, Pa.**PERFORATED METAL.**Chicago Perforating Co., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Harrington & King Perf. Co., Chicago, Ill.
Hendrick Mfg. Co., Carbondale, Pa.
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.**PETROLEUM REFINERS.**

Gulf Refining Co., Pittsburgh, Pa.

PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md.

—(Machinery.)

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

PIG-IRON.Republic Steel Corp., Youngstown, Ohio.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

PILE SHOES.

Janney, Jr., Jos. A., Phila., Pa.

PILING (Creosoted.)Amer. Creosote Wks., Inc., New Orleans, La.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago, Ill.
Carolina Wood Preserving Co., Charleston, S. C.
Savannah Creosoting Co., Inc., Savannah, Ga.
Wales Wood-Preserving Co., Norfolk, Va.**—(Steel Sheet.)**Carnegie Steel Co., Pittsburgh, Pa.
Zelicker Supply Co., W. A., St. Louis, Mo.**PILLOW BLOCKS.**

Goldens' Fdry. & Mch. Co., Columbus, Ga.

PIPE.Albert & Davidson Pipe Corp., Brooklyn, N. Y.
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.
Armco Culvert Mfrs. Assn., Middletown, Ohio.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Central Pipe & Sup. Co., Charleston, W. Va.
Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.
Hudson Pipe & Sup. Co., Bayonne, N. J.
Maryland Pipe & Steel Corp., Baltimore, Md.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.**—(Cast Iron.)**Amer. Cast Iron Pipe Co., Birmingham, Ala.
Cast Iron Pipe Research Assn., Chicago, Ill.
Central Foundry Co., The, New York, N. Y.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
National Cast Iron Pipe Co., Birmingham, Ala.
U. S. Pipe & Foundry Co., Burlington, N. J.**—(Dredge.)**

Abendroth & Root Mfg. Co., New York, N. Y.

—(Hammer-Welded.)

National Tube Co., Pittsburgh, Pa.

—(Iron and Steel.)Ryerson & Son, Inc., Jos. T., St. Louis, Mo.
and New York.**—(Riveted.)**

Abendroth & Root Mfg. Co., New York, N. Y.

—(Second-Hand.)

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

—(Steel.)Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.
Central Pipe & Sup. Co., Charleston, W. Va.
Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.
Hudson Pipe & Supply Co., Bayonne, N. J.
Marine Metal & Supply Co., New York, N. Y.
Maryland Pipe & Steel Corp., Baltimore, Md.**—(Spiral Riveted.)**Abendroth & Root Mfg. Co., New York, N. Y.
Taylor Forge & Pipe Wks., Chicago, Ill.**—(Steel.)**Bethlehem Steel Co., Bethlehem, Pa.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
Republic Steel Corp., Youngstown, Ohio.
Youngstown Sheet & Tube Co., Youngstown, Ohio.**—(Welded.)**

Welded Products Co. of La., Inc., New Orleans, La.

—(Wrought Iron.)

Reading Iron Co., Reading, Pa.

—Benders and Headers.

Grinnell Co., Inc., Providence, R. I.

—Bending Machines.

American Pipe Bending Machine Co., Boston, Mass.

—Coatings.

Foster Co., Benjamin, Philadelphia, Pa.

—Fittings.Amer. Cast Iron Pipe Co., Birmingham, Ala.
Georgia Iron Works, Augusta, Ga.
Grinnell Co., Inc., Providence, R. I.**—Lines (Water, Gas & Oil—Riveted or Welded.)**

Biggs Boiler Works Co., Akron, Ohio.

—Machinery (Concrete.)

Quinn Wire & Iron Works, Boone, Iowa.

—Unions and Joints.

Dart Mfg. Co., E. M., Providence, R. I.

—Systems (Industrial.)Grinnell Co., Inc., Providence, R. I.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.**—Power Piping Co., Pittsburgh, Pa.****PLANERS and Mortisers (Hand and Electric.)**

Wapbat, Incorporated, Pittsburgh, Pa.

Magnificence at its Height

THE new Waldorf-Astoria is truly "magnificence at its height". Arising from traditions rich in association with famed personages from all countries of the globe... this renowned hostelry achieves new splendor in size, decoration and equipment. Infinitely more commodious than its predecessor whose name it bears, the magnificent new Waldorf-Astoria is planned to be the center of hospitality for a modern world.

Naturally in so fine a structure every piece of mechanical equipment must bear the closest scrutiny—the piping systems will be the "last word"—the major tonnage will be NATIONAL—

America's Standard Wrought Pipe

The New
WALDORF-ASTORIA
New York City

Architect: Schultze & Weaver
Consulting Engineer: Clyde R. Place
General Contractor: Thompson-Starrett Co.
Plumbing Contractor: John McMillan Co.
Heating Contractor: Thompson-Starrett Co.

NATIONAL PIPE

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

PLATES (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Myerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham.

PNEUMATIC TOOLS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.

POLES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquhitt Co., Spartanburg, S. C.

—(Steel.)

Bates Steel Corp., Walter, Gray, Ind.

—(Tubular, Steel.)

National Tube Co., Pittsburgh, Pa.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

PORTABLE HOUSES (Metal.)

Braden Steel Corp., Tulsa, Okla.

POST CAPS.

Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)

U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mfg. Co., Indianapolis.
Golden's Fdy. & Mch. Co., Columbus, Ga.
Morse Chain Co., Ithaca, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Co., J. S., Mason, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

—(Pumps.)

Luitwieler Pumping Engine Co., Rochester, N. Y.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City

PRESSES (Baling, Cottonseed Oil, Hydraulic and Power.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Ripley Foundry & Machine Co., Ripley, O.

—(Metal Stamping.)

Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)

Smith & Son Co., Oscar T., Baltimore Md.
Young & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)

Gas-O-Flame Stove Works, Port Deposit Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., B. D., Phila., Pa.

PULLEYS (Friction Clutch.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

—(Motor and Machine.)

American Pulley Co., Philadelphia, Pa.

—(Steel Split.)

American Pulley Co., Phila., Pa.

—Shafting and Hangers.

American Pulley Co., Phila., Pa.
Golden's Fdy. & Mch. Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PULVERIZED COAL EQUIPMENT.

Combustion Engr. Corp., New York, N. Y.
Fuller Lehigh Co., Fullerton, Pa.

PULVERIZERS (See Crushing and Pulverizing Machinery.)**PUMPING MACHINERY.**

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Chain Belt Co., Milwaukee, Wis.
Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Luitwieler Pumping Engine Co., Rochester, N. Y.
Myers & Bro. Co., The F. E., Ashland, Ohio.
National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Platt Iron Works, Dayton, Ohio.
Viking Pump Co., Cedar Falls, Iowa.
Virginia Mch. & Well Co., Richmond, Va.

PUMPS (Air.)

Manitowoc Iron Works Co., Manitowoc, Mich.

—(Air Lift.)

Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Boiler Feed.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Manitowoc Iron Works Co., Manitowoc, Mich.
Myers & Bro. Co., The F. E., Ashland, O.

—(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Layne & Bowler, Inc., Memphis, Tenn.
Manitowoc Iron Works Co., Manitowoc, Mich.
Morris Machine Wks., Baldwinville, N. Y.
Novo Engine Co., Lansing, Mich.
Union Steam Pump Co., Battle Creek, Mich.

—(Contractors.)

Erie Pump & Engine Wks., Medina, N. Y.
Novo Engine Co., Lansing, Mich.

—(Deep Well.)

Cook, Inc., A. D., Lawrenceburg, Ind.
Layne & Bowler, Inc., Memphis, Tenn.
Luitwieler Pumping Engine Co., Rochester, N. Y.
Novo Engine Co., Lansing, Mich.

—(Diaphragm.)

Novo Engine Co., Lansing, Mich.

—(Hydraulic.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

—(Power.)

Platt Iron Works, Dayton, Ohio.
Sterling Engine Co., Buffalo, N. Y.

—(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.

—(Rotary.)

Viking Pump Co., Cedar Falls, Iowa

—(Sand and Dredging.)

Ellicott Machine Corp., Baltimore, Md.
Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Emerson Pump & Valve Co., Alexandria, Va.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Works), New York, N. Y.
Platt Iron Works, Dayton, Ohio.

—(Vacuum.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Water Works.)

Layne & Bowler, Inc., Memphis, Tenn.
Manitowoc Iron Works Co., Manitowoc, Mich.

PUNCHING and SHEARING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.

RACK RAKES.

Newport News Shipbuilding & Drydock Co., Newport News, Va.

RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

RAILINGS (Iron Pipe.)

Pipe Railing Constr. Co., Long Island City, N. Y.

—and Grilles, Iron and Brass, (Banks and Offices.)

Ludlow Saylor Wire Co., The St. Louis, Mo.

RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.

—Equipment and Supplies (Used.)

Birmingham Rail & Loco. Co., Birmingham.
Equip. Sales & Rentals Co., Pittsburgh.
Levi & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zelnicke Supply Co., W. A., St. Louis.

—(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.
Central of Georgia Rwy., Savannah, Ga.
Missouri - Kansas - Texas Lines, Dallas, Texas.
Missouri Pacific Lines, St. Louis, Mo.
Model Land Company, Flagler System, St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville, Tenn.

RAILS (New and Used.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.
Carnegie Steel Co., Pittsburgh, Pa.
Levi & Co., Henry, Philadelphia, Pa.
Perry, Burton, Doane Co., Philadelphia.
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Weller & Co., Birmingham, Ala.
Zelnicke Supply Co., W. A., St. Louis.

RAILWAYS (Industrial.)

Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.

—(Marine.)

Charleston Dry Dock and Machine Co., Charleston, S. C.

RECEPTACLES (Self-foosing — Waste Paper.)

Whitaker Paper Co., Baltimore, Md.

REELS and SPOOLS. (Pressed Metal.)

American Pulley Co., Philadelphia, Pa.

REFRACATORIES.

Harbison-Walker Refractories Co., Pittsburgh.
North American Refractories Co., Cleveland, Ohio.
Taylor Sons Co., Charles, Cincinnati.

REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)**REINFORCING for Concrete.**

American Steel and Wire Co., Balto., Md.
Carnegie Steel Co., Pittsburgh, Pa.
Connors Steel Co., Birmingham, Ala.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Myerson & Son, Inc., Jos. T., St. Louis and New York.
Southern Engineering Co., Charlotte, N. C.

RESURFACING MATERIALS (Floor, Roof and Roadways.)

Stonhard Co., Phila., Pa.

RETORTS (Special Processes — Riveted or Welded.)

Biggs Boiler Works, Akron, Ohio

RIVER and HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)

Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York
Kansas City Bridge Co., Kansas City

RIVETS.

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

ROAD and Street Machinery.

Austin-Western Road Mchry. Co., Chicago.
Blaw-Knox Co., Pittsburgh, Pa.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., San Leandro, Cal.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Universal Crane Co., Lorain, Ohio.

—and Street Material.

Boxley & Co., W. W., Roanoke, Va.
Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Woodstock Slag Corp., Birmingham, Ala.

—Graders and Scrapers.

Austin-Western Road Mchry. Co., Chicago.
Caterpillar Tractor Co., San Leandro, Cal.

—Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.

—Reinforcement (Welded Fabric.)

American Steel & Wire Co., Balto., Md.

—Rollers (Steam and Gasoline.)

Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.

—Rollers (For Concrete Work.)

Macon Concrete Roller Co., Macon, Ga.

—Scarifiers.

Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.

ROOFING (Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.

—and Siding (Composition.)

Eternit, Inc., St. Louis, Mo.

—and Siding (Metal.)

American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.

Gulf State Steel Co., Birmingham, Ala.
Muir Steel Co., Milwaukee, Wis.

Moschler-Edwards Corr. Co., Cincinnati, O.
Republic Steel Corp., Youngstown, Ohio.
Robertson Co., H. H., Pittsburgh.

Ryerson & Son, Jos. T., St. Louis and New York.
Youngstown Sheet and Tube Co., Youngstown, O.

—Tile, Cement (Interlocking Flat, Channel Glass.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Tiles.

Amer. Cement Tile Mfg. Co., Pittsburgh.

ROPE (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis

—Drives.

Wood's Sons Co., T. B., Chambersburg, Pa.

RULES (Steel.)

Lufkin Rule Co., Saginaw, Mich.

SAND.

Arundel Corp., Baltimore, Md.
Friend & Co., Inc., Petersburg, Va.

SANTARY Drinking Fountains.

Rundie-Spence Mfg. Co., Milwaukee, Wis.

SASH (Industrial.)

Detroit Steel Products Co., Detroit, Mich.

—(Operating Devices.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel, Basement, Ventilating.)

Detroit Steel Products Co., Detroit, Mich.

SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

SAW BIGS.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.

SAWS (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

—(Portable, Electric, Hand.)

Wappat, Incorporated, Pittsburgh, Pa.

SCAFFOLDING (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

ARTESIAN WELLS

ANY SIZE ANY DEPTH
DRILLED ANYWHERE

VIRGINIA MACHINERY & WELL COMPANY, Inc.
Dept. M. R. RICHMOND, VA

**AN ERIE**

Extraordinary feats are accomplished with this
DRAINAGE PUMP
Speed is adjusted to suit conditions. Pumps furnished belted or directly connected.

ERIE PUMP & ENGINE WORKS
154 Glenwood Ave. Medina, N. Y.

SAND PUMPS

A wide range of types in sizes 4" to 15"

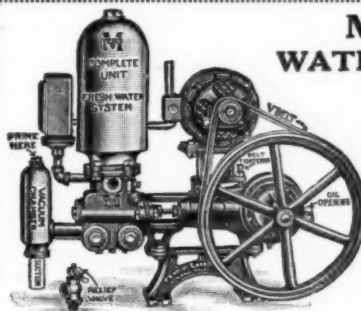
For belt drive and for direct connection to motor

Illustrated booklet on request

GEORGIA IRON WORKS
AUGUSTA, GA.

RoTURBo CENTRIFUGAL PUMPS

Manistee Iron Works Co., Manistee, Michigan

**MYERS WATER SYSTEMS**

Quality, service, price—determining factors in business success. For those who sell and install pumps and water systems, the Myers Line satisfactorily meets these conditions. Styles and sizes in a wide capacity range offer unusual sales advantages for progressive dealers. Whatever your local water conditions may be, write or wire for information and catalog.

The F. E. MYERS & BRO. CO., Ashland, O.



VIKING PUMPS

YOUR VIKING BOOK IS Ready for You

Get the complete Viking story. Learn how over 200,000 Viking Rotary Pumps are serving every phase of industry. Don't invest in pumping equipment until you have investigated Viking.

Viking Pump Co.
Cedar Falls, Iowa

Goldens' Foundry & Machine Co.

COLUMBUS, GEORGIA

MANUFACTURERS OF

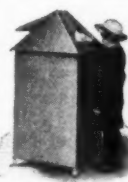
**MACHINE MOULDED PULLEYS
HANGERS SHAFTING**

Couplings, Pillow Blocks, Floor Stands, Collars, etc.

Send for Price List and Discount Sheet

SOLAR SELF-CLOSING WASTE RECEPTACLES

- 1 Reduce Cleaning Costs.
- 2 Eliminate Fire Hazards.
- 3 Promote Sanitation.
- 4 Reduce Plumbing Expenses.
- 5 Harmonize with Finest Surroundings.
- 6 Will Last Many Years—no upkeep.



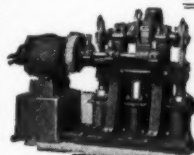
Solars are the modern way of collecting waste in a clean, silent, efficient, and unobjectionable manner. Dignified and beautiful in appearance. Made in nine sizes, and four color finishes.

THE WHITAKER PAPER COMPANY

Saratoga St. and Guilford Ave. Baltimore, Maryland

PLATT IRON WORKS - DAYTON, OHIO.

Smith-Vaile  Pumps



**STEAM and POWER
PUMPING MACHINERY**

**Water Works Valves
"Built to a Standard"**

Write for details—today!

VOGT BROTHERS MFG. CO.

INCORPORATED
LOUISVILLE · KENTUCKY

REINFORCING BARS

Deformed. All sizes. Rounds and Squares ¼" to 1¼" New Billet Stock. Straight or Bent. Warehouse or Mill Shipments.

KNOXVILLE IRON CO., Knoxville, Tenn.

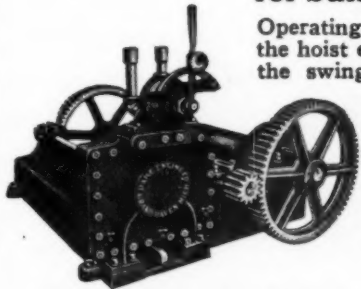
STEEL PLATE CONSTRUCTION

RIVETED AND WELDED PIPE, STACKS, AIR DUCTS
BINS STEEL STORAGE TANKS LADLES

BIRMINGHAM BOILER & ENGINEERING CO.
BIRMINGHAM, ALA.

SCHOOLS (Correspondence.)
International Correspondence Schools.
Scranton, Pa.**SCOOPS (Hand.)**
American Mfg. Co., Chattanooga, Tenn.
—Wheeled.
Riddell Co., W. A., Bucyrus, Ohio.**SCRAPERS (Drag and Wheel.)**
Austin-Western Road Mchry. Co., Chicago.
Sauerman Bros., Chicago, Ill.**SCRAP IRON AND STEEL.**
Hunts Sons, M. J., Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Smith & Co., W. M., Birmingham, Ala.**SCREENING (For Concrete and Road Construction.)**
American Limestone Co., Knoxville, Tenn.**SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)**
Chicago Perforating Co., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Ludlow Saylor Wire Co., The St. Louis, Mo.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
Universal Crusher Co., Cedar Rapids, Iowa.**SCREW-Machine Products.**
Progressive Mfg. Co., Torrington, Conn.**SCREWS (Machine.)**
Progressive Mfg. Co., Torrington, Conn.**SEAWALLS.**
Shore-Line Builders, Inc., Jacksonville, Fla.**SEPARATORS (Dust.)**
Raymond Bros., Impact Pulv. Co., Chicago.**SEWAGE Disposal Apparatus.**
Pacific Flush-Tank Co., New York, N. Y.**SEWER Joint Compounds.**
Pacific Flush-Tank Co., New York, N. Y.
—Pipe (Vitrified).
Bannon Pipe Co., Louisville, Ky.
Dee Co., Wm. E., Oak Hill, Ohio.
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.**SEWER PIPE MACHINERY (Concrete.)**
Quinn Wire & Iron Works, Boone, Iowa.**SHAFTING.**
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.**—(Cold Rolled.)**
Bliss & Laughlin, Inc., Harvey, Ill.**—(Flexible.)**
Strand & Co., N. A., Chicago, Ill.**—Material (Tubular.)**
National Tube Co., Pittsburgh, Pa.**SHARPENING Stones.**
Carborundum Co., Niagara Falls, N. Y.**SHEET Metal Work.**
National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.**Skinner Bros. Mfg. Co., St. Louis, Mo.****—Metal Working Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.
Yoder Co., The, Cleveland, Ohio.**—Steel and Iron.**
American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.**Bethlehem Steel Co., Bethlehem, Pa.****Granite City Steel Co., Granite City, Ill.****Gulf States Steel Co., Birmingham, Ala.****Republic Steel Corp., Youngstown, Ohio.****Ryerson & Son, Inc., Jos. T., St. Louis and New York.****Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.****Youngstown Sheet & Tube Co., Youngstown, O.****SHEETS (Asbestos.)**
Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.**—(Steel—Asbestos Covered.)**
Robbison Co., H. H., Pittsburgh, Pa.**SHELVING (Unit.)**
Lupton's Sons Co., David, Phila., Pa.**SHINGLES (Asbestos.)**
Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.**—(Stain.)**
Cabot, Inc., Samuel, Boston, Mass.**SHIPPING CARTONS (Corrugated Paper.)**
Hinde & Dauch Paper Co., Sandusky, O.**SHOVELS (Hand.)**
American Mfg. Co., Chattanooga, Tenn.**—(Steam, Gas and Electric Power.)**
Bucyrus-Erie Co., Erie, Penna.**Harnischfeger Corp., Milwaukee, Wis.****Industrial Brownist Corp., Cleveland, O.****National Equipment Corp. (Koehring, Insley), Milwaukee, Wis.****Northwest Engineering Co., Chicago, Ill.****Ohio Power Shovel Co., Lima, Ohio.****Thew Shovel Co., The, Lorain, Ohio.****Universal Power Shovel Co., Milwaukee, Wis.****SHUTTERS (Steel.)**
Merchant & Evans Co., Philadelphia, Pa.**—(Steel and Wood Bifolding.)**
Kinneer Mfg. Co., The, Columbus, Ohio.**SILICATE OF SODA.**
Grasselli Chemical Co., Inc., Birmingham, Ala.**SITES (Manufacturing.)**
Alabama Power Co., Birmingham, Ala.**Arkansas Natural Gas Corp., Shreveport, La.****Atlanta and West Point R. R., Atlanta, Ga.****Brown & Co., Chattanooga, Tenn.****Central of Georgia Rwy., Savannah, Ga.****Central Power & Light Co., San Antonio, Texas.****Fort Worth Chamber of Commerce, Fort Worth, Texas.****Galveston City of, Galveston, Texas.****Georgia Power Co., Atlanta, Ga.****Jacksonville, City of Jacksonville, Florida.****Missouri - Kansas - Texas Lines, Dallas, Texas.****Missouri Pacific Lines, St. Louis, Mo.****Model Land Company, (Flagler System), St. Augustine, Fla.****Norfolk & Western Railway, Roanoke, Va.****Tennessee Central Railway, Nashville, Tenn.****Texas Power & Light Co., Dallas, Texas.****SKYLIGHTS.**
Milnor Steel Co., Milwaukee, Wis.**Robertson Co., H. H., Pittsburgh, Pa.****SLABS (Concrete Floor.)**
American Cement Tile Mfg. Co., Pittsburgh, Pa.**—(Concrete Roof.)**
American Cement Tile Mfg. Co., Pittsburgh, Pa.**SLAG, For Concrete.**
Gloss-Sheffield Steel and Iron Co., Birmingham, Ala.**Woodstock Slag Corp., Birmingham, Ala.****—(Furnace.)**
Gloss-Sheffield Steel and Iron Co., Birmingham, Ala.**Woodstock Slag Corp., Birmingham, Ala.****SLINGS (Chain.)**
Woodhouse Chain Works, Trenton, N. J.**—(Wire Rope.)**
Hoebing's Sons Co., John A., Trenton, N. J.**SPRINKLERS (Automatic Fire.)**
Grinnell Co., Inc., Providence, R. I.**SPROCKETS.**
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.**STACKS (Iron and Steel.)**
Biggs Boiler Works Co., Akron, Ohio.**Chattanooga Boiler & Tank Co., Chattanooga, Tenn.****Chicago Bridge and Iron Works, Atlanta, Ga.****Downingtown Iron Wks., Downingtown, Pa.****Hammond Iron Works, Warren, Pa.****Hedges Walsh Weldner Co., Chattanooga, Tenn.****Ingalls Iron Works Co., Birmingham, Ala.****Lombard Iron Works & Supply Co., Augusta, Ga.****Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.****Schofield's Sons Co., J. B., Macon, Ga.****U. S. Pipe & Foundry Co., Burlington, N. J.****Virginia Bridge & Iron Co., Roanoke, Va.****STAINS (Shingle, Woodwork.)**
Cabot, Inc., Samuel, Boston, Mass.**STAIR Steps (Safety.)**
Irving Iron Works Co., Long Is. City, N. Y.**—Treads.**
Bates Steel Corp., Walter, Gray, Ind.**Central Iron & Steel Co., Harrisburg, Pa.****STAMPING (Sheet Metal.)**
American Pulley Co., Philadelphia, Pa.**STANDPIPES.**
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.**Chicago Bridge & Iron Works, Atlanta, Ga.****Hammond Iron Works, Warren, Pa.****Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.****STATIONERS (Envelopes, Letter and Billheads, etc.)**
Smith & Son Co., Oscar T., Baltimore, Md.**Young & Selden Co., Baltimore, Md.****STEAM SHOVELS.**
Bucyrus-Erie Co., Erie, Pa.**Thew Shovel Co., The, Lorain, Ohio.****STEAM (Specialties.)**
Jenkins Bros., New York, N. Y.**Lenkenheimer Co., The, Cincinnati, O.****Mueller Co., Decatur, Ill.****—Traps.**
Jenkins Bros., New York, N. Y.**STEEL.**
Bethlehem Steel Co., Bethlehem, Pa.**Central Iron & Steel Co., Harrisburg, Pa.****Dietrich Brothers, Baltimore, Md.****Gulf States Steel Co., Birmingham, Ala.****Republic Steel Corp., Youngstown, Ohio.****Ryerson & Son, Inc., Jos. T., St. Louis and New York.****Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.****Virginia Bridge & Iron Co., Roanoke, Va.****—(Alloy.)**
Timken Roller Bearing Co., Canton, Ohio.**Bristol Steel & Iron Works, Inc., Bristol, Va.****Carolina Steel & Iron Co., Greensboro, N. C.****Central Iron & Steel Co., Harrisburg, Pa.****Chattanooga Boiler & Tank Co., Chattanooga, Tenn.****Chicago Bridge & Iron Works, Atlanta, Ga.****Combustion Engr. Corp., New York City.****Hammond Iron Works, Warren, Pa.****Hedges Walsh Weldner Co., Chattanooga, Tenn.****Ingalls Iron Works Co., Birmingham, Ala.****Phoenix Iron Co., The, Phila., Pa.****Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.****Taylor Engineering & Mfg. Co., Allentown, Penna.****STOKERS (Mechanical.)**
Babcock & Wilcox Co., The, New York.**Combustion Engr. Corp., New York City.****STORAGE Batteries.**
Electric Storage Battery Co., Philadelphia.**—Bins (Steel.)**
Blaw-Knox Co., Pittsburgh, Pa.**STRIPS (Steel.)**
American Steel & Wire Co., Baltimore.**STRUCTURAL STEEL (Hot Galvanized.)**
Bessemer Galvanizing Works, Birmingham.**—and Iron.**
American Bridge Co., New York, N. Y.**Belmont Iron Works, Philadelphia, Pa.****Bristol Steel & Iron Works, Inc., Bristol, Va.****Carnegie Steel Co., Pittsburgh, Pa.****Carolina Steel & Iron Co., Greensboro, N. C.****Champion Bridge Co., Wilmington, Ohio.****Chattanooga Boiler & Tank Co., Chattanooga, Tenn.****Converse Bridge & Steel Co., Chattanooga, Tenn.****Dietrich Brothers, Baltimore, Md.****Eichleay, Jr. Co., John, Pittsburgh.****Erie Steel Constr. Co., Erie, Pa.****Ingalls Iron Works Co., Birmingham, Ala.****McClintic-Marshall Co., Pittsburgh, Pa.****Nashville Bridge Co., Nashville, Tenn.****Phoenix Iron Co., The, Phila., Pa.****Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.****Republic Steel Corp., Youngstown, Ohio.****Richmond Struc. Steel Co., Richmond, Va.****Roanoke Iron & Bridge Works, Inc., Roanoke, Va.****Ryerson & Son, Inc., Jos. T., St. Louis and New York.****Snead Architectural Iron Works, Louisville, Ky.****Southern Engineering Co., Charlotte, N. C.****Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.****Virginia Bridge & Iron Co., Roanoke, Va.****SULPHATE OF ALUMINA.**
Grasselli Chemical Co., Inc., Birmingham, Ala.**SULPHATE PULP MILLS.**
Swenson Evaporator Co., Harvey, Ill.**SULPHIDE OF SODA.**
Grasselli Chemical Co., Inc., Birmingham, Ala.**SULPHURIC ACID.**
Davison Chemical Co., The, Balto., Md.**Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.****SUPER-HEATERS (Steam.)**
Babcock & Wilcox Co., The, New York.**SURVEYS (Industrial.)**
Dane-Wolfe Co., Washington, D. C.**MacElwae & Crandall, Inc., Cambridge, Mass.****Technical Service Co., New York, N. Y.****—Quantity.**
Rowan, W. E., Charlotte, N. C.**Spring, Charles Herbert, Greensboro, N. C.****SURVEYING INSTRUMENTS.**
Weber Co., Inc., F., Philadelphia, Pa.**SWEEPING COMPOUNDS.**
Clark, Lloyd T., Southern Pines, N. C.**SWINGING ENGINES.**
Dake Engine Co., Grand Haven, Mich.**SWITCHBOARDS, SWITCHES, ETC.**
Adam Elec. Co., Frank, St. Louis.**General Electric Co., Schenectady, N. Y.****Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.****SYSTEMS (Business.)**
Ernst & Ernst, New York, N. Y.**TACKLE BLOCKS (For Wire and Manila Rope.)**
Patterson Co., W. W., Pittsburgh.

DAKE SWINGING ENGINES for bull wheel derricks



Operating independently of the hoist engine, they cut down the swinging time and speed up derrick work.

The engine has no dead centers and starts instantly from any position permitting quick accurate spotting of the load.

Also made for Electric Drive. Send for catalog.
DAKE ENGINE CO., Grand Haven, Mich.

SULPHURIC ACID SUPERPHOSPHATE DOUBLE SUPERPHOSPHATE

Manufactured and Distributed by

The Davison Chemical Co.

Main Office

Baltimore, Md.

Main Plant, Baltimore: Pyrites Deposits Cienfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Fertilizer Plants: Maryland 11; Virginia 9; Pennsylvania 10; Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

Improved Steel Log and Cylindrical Washers, Combined Scrubbing and Washing Screens

These machines are based on 50 years experience in building heavy, rugged machines for economically washing hematite, manganese and gold ores, limestone, sand, gravel, peat, etc.

Write for catalogs and information on Pit, Mine Quarry and Industrial Equipment, crushers, ore flgs, screens, dryers, hoists, etc.

McLanahan and Stone Machine Company
Hollidaysburg, Pa.

DIETRICH BROTHERS

Structural and Ornamental Iron and Steel Works
Large Stock of Standard and Bethlehem Shapes
CONCRETE REINFORCEMENTS
BALTIMORE, MD.

PERFORATED METALS HEADQUARTERS

Cotton Seed Oil Works a Specialty

Send for Samples

ERDLE PERFORATING CO. Rochester, N. Y.

EARLE

Cut Spur, Bevel, Herringbone and Worm Gears

All sizes. Every description. Operating Machinery for Bridges, etc. "Lee Simplex" Cold Metal Saws.

The Earle Gear & Machine Co.

4719 Stenton Avenue,
Philadelphia, Pa.

110 State St., Boston, Mass.
95 Liberty St., New York City

GEARS

BENSON BRASS & CHANDELIER WORKS

Interior and Exterior Lighting Fixtures
for Public Buildings

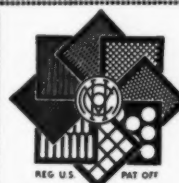
—and—
Metal Spinings for Aircrafts
and all Other Purposes

1417-19 Agnes Avenue Kansas City, Missouri

Perforated Metals SCREENS OF ALL KINDS

Chicago Perforating Co.

2445 West 24th Place
Tel. Canal 1459 CHICAGO, ILL.



Perforated Metal Screens for every purpose

also elevator buckets MITCO Products—In-
of all kinds; chutes; terlocked Steel Grating;
hoppers; stacks and Shur-Site Stair Treads;
tanks. Armorgrids.

HENDRICK MANUFACTURING CO.

New York: 30 Church St.

44 Dundaff St., Carbondale, Pa.
Pittsburgh: Koppers Building

Perforated Metal Screens

Perfection, the result of years of experience.

Mundt products embodies a degree of perfection derived from 43 years manufacturing perforated metals. This experience is placed at your disposal, and if you are in the market for perforated metals, you should not place your order until you have consulted with us.

CHARLES MUNDT & SONS

490 Johnston Avenue

JERSEY CITY, N. J.

TANKS (Air Compressor.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.
Scaife & Sons, Wm. B., Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa.

—(Elevated Steel.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Elevated Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Woodford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

—(Iron and Steel.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.
Biggs Boiler Works Co., Akron, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Downingtown Iron Works, Downingtown, Pa.
Hammond Iron Works, Warren, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
McClintic-Marshall Co., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Scaife & Sons, Wm. B., Oakmont, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Seamless Steel.)

Jannay, Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.

—(Storage, Oil, etc.)

Biggs Boiler Works, Akron, Ohio.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Downingtown Iron Works, Downingtown, Pa.
Hammond Iron Works, Warren, Pa.
Ingalls Iron Works Co., Birmingham, Ala.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Titusville Iron Works Co., Titusville, Pa.

—(Welded.)

Welded Products Co. of La., Inc., New Orleans, La.

—(Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Virginia Mch. & Well Co., Richmond, Va.
Woodford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

—(Wood Pickling.)

Woodford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

TAPE (Insulating.)

Okonite Co., New York, N. Y.

—(Measuring.)

Lufkin Rule Co., Saginaw, Mich.

TAX SPECIALISTS.

Ernst & Ernst, New York, N. Y.
Le Baron, E. T., Jacksonville, Fla.

TELEPHONE SERVICE.

American Telephone & Telegraph Co.

TERRA COTTA (Ornamental.)

Atlanta Terra Cotta Co., Atlanta, Ga.

TEXTILE CHEMICALS.

Grasselli Chemical Co., Inc., Birmingham, Ala.

TILE (Cement Roofing.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Cork Composition.)

Congoleum-Nairn Inc., Kearny, N. J.

—(Cork Flooring.)

Congoleum-Nairn Inc., Kearny, N. J.

—(Floor.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Roof.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Sewer.)

Lee Clay Products Co., Clearfield, Ky.

TIMBER Fittings.

Duplex Hanger Co., Cleveland, Ohio.

—(Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.

TIME Recorders.

Kaiser Klock Co., L. E., Baltimore, Md.

TIN AND TERNE PLATES.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOBACCO MACHINERY.

Ripley Foundry & Machine Co., Ripley, O.

TOILET TISSUE.

Victoria Paper Mills Co., Fulton, N. Y.

TOOLS (Measuring.)

Lufkin Rule Co., Saginaw, Mich.

—(Woodworking—Portable Electric, Hand.)

Wappat, Incorporated, Pittsburgh, Pa.

TORCHES (Blow.)

Wall Mfg. Supply Co., P., Pittsburgh, Pa.

TOWERS (Electric Transmission.)

American Bridge Co., New York, N. Y.

Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Ala.
Nashville Bridge Co., Nashville, Tenn.

—(Radio.)

Bessemer Galv. Wks., Birmingham, Ala.

—(Steel and Wood.)

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

TRACK (Portable or Permanent)

Equipment Corp. of America, Chicago, Ill.
Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)

Atlas Car & Mfg. Co., The, Cleveland, O.
Caterpillar Tractor Co., San Leandro, Cal.
Clark Tractor Co., Battle Creek, Mich.
Cleveland Tractor Co., Cleveland, Ohio.
International Harvester Co., of America, Inc., Chicago, Ill.

—(Road.)

Caterpillar Tractor Co., San Leandro, Cal.
Cleveland Tractor Co., Cleveland, Ohio.

—Attachments (Side Boom.)

W-K-M Co., Inc., Houston, Texas.

TRAILERS (Four Wheel.)

Electric Wheel Co., Quincy, Ill.

—(Heavy Duty.)

Electric Wheel Co., Quincy, Ill.

—(Industrial.)

Easton Car & Construction Co., Easton, Pa.

Electric Wheel Co., Quincy, Ill.

—(Pole.)

Electric Wheel Co., Quincy, Ill.

TRAMWAYS (Aerial Wire Rope.)

American Steel & Wire Co., Balto., Md.
Broderick & Bascom Rope Co., St. Louis.
Leach & Sons Rope Co., A., St. Louis.

TRANSFORMERS.

General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)

Electric Service Co., Cincinnati, Ohio.

TRANSMISSION TOWERS (Galvanized.)

Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.

TRENCH MACHINERY. See

Excavators (Trench.)

TRESTLES (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

TRI-SODIUM PHOSPHATE.

Grasselli Chemical Co., Inc., Birmingham, Ala.

TRUCK CRANES.

Universal Crane Co., Lorain, O.

TRUCKS (Dry Kiln.)

Moore Dry Kiln Co., Jacksonville, Fla.

—(Industrial.)

Atlas Car & Mfg. Co., The, Cleveland, O.
Nutting Truck Co., Chicago, Ill.

—(Motor.)

International Harvester Co., of America, Inc., Chicago, Ill.

—(Platform, Freight, Mill, Factory, etc.)

American Pulley Co., Philadelphia, Pa.
Clark Tractor Co., Battle Creek, Mich.
Electric Wheel Co., Quincy, Ill.
Nutting Truck Co., Chicago, Ill.

—(Steel Shop.)

Angle Steel Stool Co., Plainwell, Mich.

TUBES (Boiler.) See Boiler

Tubes.

TUBING (Metal.)

Boiler Tube Co., of America, Pittsburgh.

—(Seamless Steel.)

National Tube Co., Pittsburgh, Pa.
Timken Rolling Bearing Co., Canton, O.

TURBINES (Hydraulic.)

Cook, Inc., A. D., Lawrenceburg, Ind.

Davis Foundry & Mach. Works, Rome, Ga.
Lefel & Co., The James, Springfield, O.
Smith Co., S. Morgan, York, Pa.

—(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
DeLaval Steam Turbine Co., Trenton, N. J.

General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

TURNBUCKLES.

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

TURNTABLES.

American Bridge Co., New York, N. Y.

Easton Car & Construction Co., Easton, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable for Motor Trucks.)

Blaw-Knox Co., Pittsburgh, Pa.

UNIONS.

Dart Mfg. Co., E. M., Providence, R. I.

UNIT HEATERS.

Grinnell Co., Inc., Providence, R. I.

Skinner Bros. Mfg. Co., St. Louis, Mo.

VALVES.

Jenkins Bros., New York, N. Y.

Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Merco Nordstrom Valve Co., San Francisco, Cal.

Mueller Co., Decatur, Ill.

Vogt Brothers Mfg. Co., Louisville, Ky.

Vogt Machine Co., Henry, Louisville, Ky.

Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Acid Proof.)

Lunkenheimer Co., The, Cincinnati, O.

—(Gate.)

Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Wood & Co., R. D., Philadelphia, Pa.

VENTILATING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo.

VENTILATORS (Roof.)

Merchant & Evans Co., Philadelphia, Pa.

Milcor Steel Co., Milwaukee, Wis.

Robertson Co., H. H., Pittsburgh, Pa.

WALL HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

WARDROBES (Hygienic, School.)

Wilson Corp., The J. G., New York.

WATCHMAN'S PORTABLE

CLOCKS.

Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. E., Balto., Md.

WATERPROOFING (For Brick, Concrete, Granite.)

Asphalt Products Co., Syracuse, N. Y.

Foster Co., Benjamin, Philadelphia, Pa.

Sennsborn, Sons, Inc., L., New York.

WATER Purification.

Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Scaife & Sons, Wm. B., Oakmont, Pa.

Softening Apparatus (Purifying.)

American Water Softener Co., Phila., Pa.

International Filter Co., Chicago, Ill.

Works Supplies and Appliances.

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Cook, Inc., A. D., Lawrenceburg, Ind.

Glammorgan Pipe & Fdry. Co., Lynchburg, Va.

Leadite Co., The, Philadelphia, Pa.

Mueller Co., Decatur, Ill.

U. S. Pipe & Foundry Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

WELDING APPARATUS (Electric Arc.)

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

WELL CONTRACTORS (Oil, Artesian, etc.)

Virginia Machy. & Well Co., Richmond, Va.

WHEELBARROWS.

Sterling Wheelbarrow Co., Milwaukee.

WHEELS AND AXLES.

Carnegie Steel Co., Pittsburgh, Pa.

WINCHES.

Sagen Derrick Co., Chicago, Ill.

Schultz & Son, A. L., Chicago, Ill.

WINDOW Frames and Sash (Metal.)

Bayley Co., The William, Springfield, O.

Lupton's Sons Co., David, Phila., Pa.

WINDOWS (Bronze Casement.)

Michaels Art Bronze Co., Covington, Ky.

—(Steel Basement, Casement.)

Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

Milcor Steel Co., Milwaukee, Wis.

—(Steel Garage.)

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

—(Steel Pivoted, Screened.)

Bayley Co., William, Springfield, O.

—(Ventilating.)

Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

WIRE (All Kinds.)

American Steel & Wire Co., Chicago.

Roebeling's Sons Co., John A., Trenton, N. J.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—(Barbed Wire, etc.)

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Fence.)

Anchor Post Fence Co., Baltimore, Md.

Cyclone Fence Co., Waukegan, Ill.

Page Fence Association, Chicago, Ill.

—(Flat and Round.)

American Steel & Wire Co., Balto., Md.

Galvanized and Annealed.

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

—(Telephone and Telegraph.)

American Steel & Wire Co., Balto., Md.

—(Welding.)

American Steel & Wire Co., Chicago, Ill.

Roebeling's Sons Co., John A., Trenton, N. J.

—Cloth (Iron, Steel, Copper, Brass, etc.)

Harrington & King Perf. Co., Chicago.

Ludlow Saylor Wire Co., The, St. Louis, Mo.

—Goods.

Cyclone Fence Co., Waukegan, Ill.

—Netting.

Ludlow Saylor Wire Co., The, St. Louis, Mo.

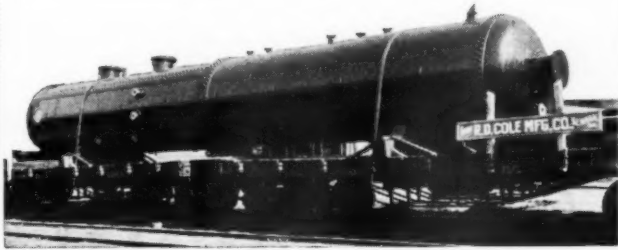
—Rope (Transmission, Hoisting, Haulage.)

American Steel & Wire Co., Chicago, Ill.

Broderick & Bascom Rope Co., St. Louis.

Leach & Sons Rope Co., A

COLE



Tanks & Vats
for Acid Storage

NH₃ Storage

Aluminum

Alloy Steels

Lead Lined

Monel Metal

Tin Lined

Boilers—HRT
and Manning

Jacketed Kettles

Agitator Tanks

Bubble Towers

Gas Scrubbers

Welded Steel Pipe

Creosoting Cylinders



R. D. COLE MANUFACTURING CO.

Established 1854

NEWNAN, GA.

New York Office,
5 Beekman St.

TANKS

BOILERS

ENGINES

BARGES

DRYERS

and MACHINERY

BUILT TO ORDER

Write for Further Information

J. S. SCHOFIELD'S SONS CO.

MACON, GA.

STEEL TANKS

ANY SIZE FOR ANY PURPOSE

PITTSBURGH-DES MOINES STEEL COMPANY

11 NEVILLE ISLAND - PITTSBURGH, PA.

DES MOINES NEW YORK CHICAGO ATLANTA DALLAS SEATTLE SAN FRANCISCO

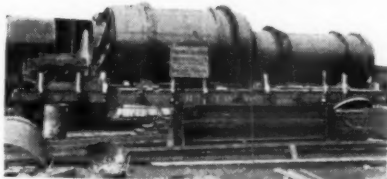


Biggs Welded or Riveted
High Pressure Tanks,
Vessels, Retorts, and Steel
Plate Construction of
every description. Write
for folder shown at left.



THE BIGGS BOILER WORKS CO.
Kent and Bank Streets, Akron, Ohio

SOUTHLAND PRODUCTS



STAND
PIPES

SMOKE
STACKS

TOWERS
AND
TANKS

STEEL
RIVETED
PIPE

CHATTANOOGA BOILER & TANK CO.

Chattanooga, Tenn.

AIR-TIGHT STEEL TANK CO.

PITTSBURGH, PA.



TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. AT&CO Genuine Copper Brazed Tanks for high pressure — the tightest, safest, strongest tank it is possible to construct by any known process. ASME code tanks.

THE TANK WITH
A REPUTATION

Caldwell

Tower of Strength

The highest grade of materials and workmanship and correct, scientific design have made the Caldwell Tubular Tower a veritable tower of strength.

Its construction is so simple you can erect it yourself. Because of low wind-resistance and sturdiness of material used it will safely weather the most severe storms. Appearance, trim and pleasing. Cost, moderate.

Send for Catalog

W. E. Caldwell Co., Incorporated
1900 Brook Street,
LOUISVILLE, KY.



SCAIFE COPPER-BRAZED TANKS

for Air, Gas and Liquids

Welded Tanks Riveted Tanks Rivet-Weld Tanks

A.S.M.E.
Tanks



I.C.C.
Tanks

WATER SOFTENERS and FILTERS

(127 Years old—Founded 1802)

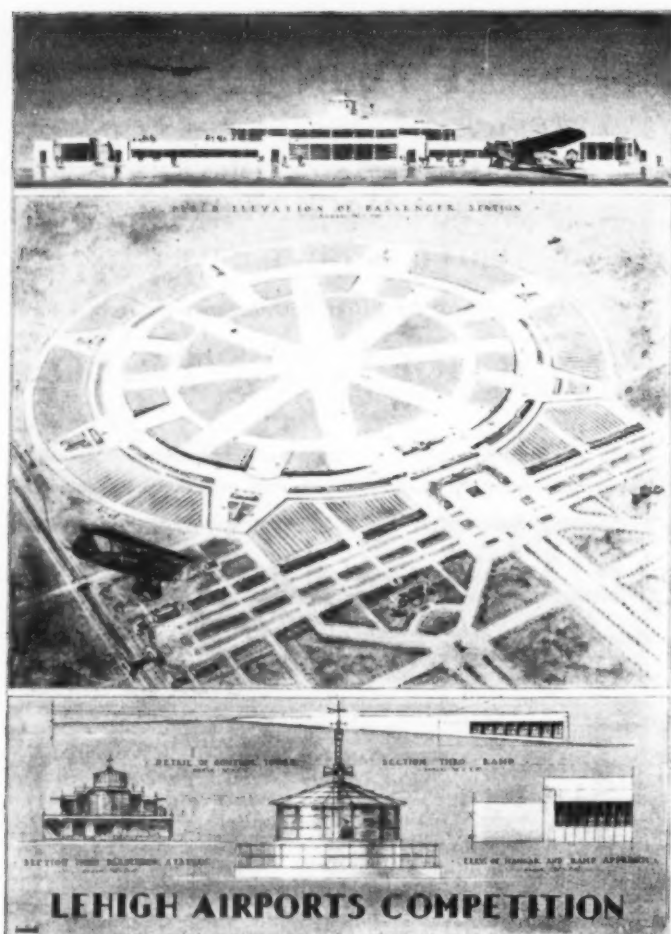
WM. B. SCAIFE & SONS CO.

Main Office OAKMONT, PA.

Pittsburgh

New York

Chicago



Honorable Mention, Designed by Robert Doulton Stott, Howard R. Hutchinson, and Lansing C. Holden, Jr., of Holden, Stott & Hutchinson, Associated Architects, New York.

THE South has been quick to realize the importance of aviation as an accelerator of city growth. The progressive communities of the South were among the first to turn their eyes skyward.

Miami, Atlanta, New Orleans, Dallas and many other cities have had excellent airports for several years. But "airmindedness" is by no means confined to the larger cities. It has spread throughout the length and breadth of Dixie.

If your community is contemplating airport development you should have a copy of our brochure, "Highlights of the Lehigh Airports Competition." This competition enlisted the efforts of engineers, architects, and city planners from all over the country. \$10,200 in prizes were awarded by a distinguished jury. The brochure will be sent to you upon request.

Awarded Honorable Mention, the modern airport illustrated above was jointly designed by Robert D. Stott, Howard R. Hutchinson and Lansing C. Holden, Jr., Associated Architects, New York City. Mr. Holden during the war was an ace credited with seven official victories in the air. He has been identified with several airport projects and recently completed the plans for the Washington Airport at South Washington, Va.

Lehigh Portland Cement Company

Allentown, Pa. Birmingham, Ala. Chicago, Ill.
Baltimore, Md. Richmond, Va.



MILLS FROM COAST TO COAST

The South scans the sky

THE JURY'S DECISION

FIRST PRIZE: A. C. Zimmerman and Wm. H. Harrison, Los Angeles, Cal. (jointly) . . . \$5,000
SECOND PRIZE: C. Gifford Rich, Chicago, Ill. . . \$2,500
THIRD PRIZE: Odd Nansen, East Orange, N. J., and Latham C. Squire, New York City (jointly) . . . \$1,000
FOURTH PRIZE: Will Rice Amon, New York City . . . \$500

Honorable Mention — \$100 each

W. Frank Bower, Jr., Henry L. Sandlass, Alfred A. Rothmann, jointly, of East Orange, N. J.
H. Roy Kelley, Los Angeles, Cal.
James S. Nussear, Jr., architect, and William N. S. Pugh, associate, Baltimore, Md.
Edward C. Remson, New York City.
George A. Robbins, Philadelphia, Pa.
Robert Paul Schweikher, Denver, Col.
Fred E. Sloan and Elmer A. Johnston, Chicago, Ill.
Lloyd N. F. Spicer, Bayside, Long Island, N. Y.
Edwin M. Stitt, Pittsburgh, Pa.
Charles A. Stone, U. Floyd Rible, jointly, Los Angeles, Cal.
Robert D. Stott, Howard R. Hutchinson, Lansing C. Holden, Jr., jointly, New York City.
Virgil Westbrook, San Clemente, Cal.

JURY OF AWARDS

Raymond M. Hood, A. I. A., A. D. P. L. G., Chairman.
Prof. Wm. A. Boring, F. A. I. A., Dean of the School of Architecture, Columbia University.
Parker Morse Hooper, A. I. A., Editor, The Architectural Forum.
Francis Keally, A. I. A.
Colonel Willard Chevalier, C. E., Publishing Director, Engineering News-Record.
George B. Ford, A. I. A., Technical Advisory Corporation, Planning Consultants; Airfield Planner to the War Department.
E. P. Goodrich, Consulting Engineer, City Planning Consultant.
Dr. George W. Lewis, Director of Research, National Advisory Committee for Aeronautics.
Major John Berry, Manager, Cleveland Municipal Airport.
Charles S. Jones, President Curtiss Flying Service.

Alphabetical Index of Advertisements

A

Abendroth & Root Mfg. Co. 26
 Adam Electric Co., Frank 1
 Airmap Corp. of America 28
 Air-Tight Steel Tank Co. 111
 Akers, William 80
 Alabama Clay Products Co. 16
 Alabama Power Co. 1
 Albert & Davidson Pipe Corp. 88
 Albert Pipe Supply Co. 88
 Allen, Charles S. 40
 Allen-Sherman-Hoff Co. 2
 Allis-Chalmers Mfg. Co. 99
 Alpaugh & Sons, Chas. W. 29
 Alpha Portland Cement Corp. 1
 Aluminum Co. of America 1
 Ambler Asbestos Shingle & Sheathing Co. 1
 American Bridge Co. 82
 American Cast Iron Pipe Co. 26
 American Cement Tile Mfg. Co. 20
 American Creosote Works 101
 American Creosoting Co. 20
 American Elevator & Machine Co. 20
 American Gas Association 36
 American Institute of Steel Construction, Inc. 1
 American Kron Scale Co. 1
 American Limestone Co. 95
 American Manufacturing Co. 1
 American Pipe Bending Machine Co. 94
 American Pressed Steel Co. 94
 American Process Co. 1
 American Pulley Co. 1
 American Rolling Mill Co. 1
 American Sheet & Tin Plate Co. 1
 American Steel & Wire Co. 1
 American Steel Dredge Co. 1
 American Telephone & Telegraph Co. 9
 American Water Softener Co. 1
 Anchor Post Fence Co. 1
 Andrews Co., A. H. 80
 Angle-Blackford Co. 28
 Angle Steel Stool Co. 1
 Arkansas Natural Gas Corp. 37
 Armo Culvert Mfrs. Asso. 101
 Arundel Corporation 94
 Asphalt Products Company 1
 Atlanta & West Point R. R. 87
 Atlanta Terra Cotta Co. 23
 Atlantic Bridge Co. 17
 Atlantic Creosoting Co. 101
 Atlantic, Gulf & Pacific Co. 94
 Atlas Car and Manufacturing Co. 92
 Austin Machinery Corp. 1
 Austin-Western Road Machy. Co. 1
 Ayer & Lord Tie Co. 1

B

Babcock & Wilcox Co. 1
 Ballinger Co. 30
 Baltimore Commercial Bank 79
 Baltimore Trust Co. 79
 Bank of Alabama 81
 Bank of New York & Trust Co. 81
 Bannon Pipe Co. 1
 Barber-Greene Co. 1
 Barrow-Agee Laboratories 29
 Barstow & Co., Inc., W. S. 31
 Bates Steel Corp., Walter 23
 Battey & Kipp 29
 Bay City Shovels, Inc. 94
 Bayley Co., Wm. 1
 Belmont Iron Works 17
 Benson Brass & Chandler Works 109
 Bessemer Galvanizing Works 1
 Bethlehem Steel Co. 26
 Biggs Boiler Wks. Co. 111
 Biggs Engineering Co., W. E. 28
 Billingsley, James W. 29
 Birmingham Boiler & Engr. Co. 107
 Birmingham Galvanizing Co. 1
 Birmingham Industrial Bureau 87
 Birmingham Rail & Loco. Co. 90
 Blair, Algernon 28
 Blaw-Knox Co. 1
 Bliss & Laughlin, Inc. 1
 Bliss Co., E. W. 1
 Blue Ridge Glass Co. 1
 Blystone Mfg. Co. 1
 Boiler Tube Co. of America 1

C

Boney, Leslie N. 28
 Bond, Geo. Harwell 28
 Boxley & Co., W. W. 1
 Braden Steel Corp. 1
 Bristol Steel & Iron Works, Inc. 17
 Broderick & Bascom Rope Co. 1
 Brooks-Seanlon Corp. 1
 Brown Wood Preserving Co. 101
 Bucyrus-Erie Co. 94
 Buffalo-Springfield Roller Co. 28
 Burkes, J. V. & R. T. 28
 Butler Manufacturing Co. 99
 Byllesby Engineering & Management Corp. 29

Cabot, Inc., Samuel 101
 Cahill Co., W. S. 87
 Caldwell Co., W. E. 111
 Calligan & Co., A. H. 30
 Cambria Clay Products Co. 1
 Cameron Steam Pump Works, A. S. (Ingersoll-Rand Co.) 1
 Carborundum Co. 10-11
 Carnegie Steel Co. 15
 Carolina Steel & Iron Co. 17
 Carolina Wood Preserving Co. 1
 Cast Iron Pipe Research Asso. 1
 Caterpillar Tractor Co. 1
 Cattie & Bros., Joseph P. 99
 Cement-Gun Co., Inc. 95
 Cement Gun Construction Co. 95
 Central Foundry Co. 26
 Central Iron & Steel Co. 94
 Central of Georgia Rwy. 1
 Central Pipe & Supply Co. 88
 Central Power & Light Co. 35
 Chain Belt Co. 1
 Champion Bridge Co. 17
 Charleston Constructors, Inc. 1
 Charleston Dry Dock & Mch. Co. 97
 Charlton & Davis 28
 Charlotte Leather Belting Co. 97
 Chase Brass & Copper Co. 1
 Chase, William J. J. 28
 Chattanooga Boiler & Tank Co. 111
 Chicago Bridge & Iron Works 40
 Chicago Perforating Co. 109
 Chicago Pneumatic Tool Co. 1
 Christian Co., J. R. 1
 Clark, Lloyd T. 20
 Clark Tractor Co. 1
 Classified Opportunities 85-86
 Cleveland Tractor Co. 1
 Clow & Sons, James B. 90
 Cohen, Chas. F. 90
 Cole Mfg. Co., R. D. 111
 Colonial Creosoting Co. 1
 Combustion Engineering Corp. 1
 Conard & Busby 29
 Congoleum-Nairn Inc. 19
 Connors Steel Co. 1
 Consoer, Older & Quinlan 28
 Continental Gin Co. 1
 Converse & Co., J. B. 29
 Converse Bridge & Steel Co. 17
 Cook, Inc., A. D. 1
 Copper & Brass Research Asso. 1
 Cornell-Young Co. 30
 Corporation Service Co. 79
 Cowper Co., The John W. 29
 Crucible Steel Casting Co. 16
 Curtin-Howe Corp. 1
 Cutler Mail Chute Co. 20
 Cyclone Fence Co. 1

D

Dake Engine Co. 109
 Dame-Wolfe & Co. 30
 Dart Mfg. Co., E. M. 1
 Davis & Son, G. M. 1
 Davis Foundry & Machine Works 1
 Davis-Paradis Watchman's Clock Corp. 1
 Davison Chemical Co. 107
 Day Pulverizer Co. 1
 Dayton Safety Ladder Co. 1
 Dee Co., Wm. E. 1
 Deemer Steel Casting Co. 1
 DeKalb, Courtenay 30
 DeLaval Steam Turbine Co. 1
 Delaware Registration Trust Co. 1
 Delaware Wood Preserving Co. 88
 Delta Equipment Co. 1

E

Diamond Chain & Mfg. Co. 1
 Dietrich Brothers 109
 Dixie Culvert & Metal Co. 101
 Dixie Culvert Mfrs. Asso. 101
 Dixie Electro-Plating Co. 30
 Dixon Crucible Co., Jos. 29
 Dow & Smith 1
 Downingtown Iron Works 1
 Draper, E. S. 28
 Dunning & Boschert Press Co. 98
 Duplex Hanger Co. 1
 DuPont de Nemours & Co., E. I. 1

Earle Gear & Machine Co. 109
 Easton Car & Constr. Co. 92
 Eichleay, Jr., Co., John 29
 Electric Bond & Share Co. 1
 Electric Service Co. 89
 Electric Storage Battery Co. 1
 Electric Wheel Co. 1
 Elliott Machine Corp. 1
 Engineering Service Corp. 28
 Eppinger & Russell Co. 101
 Equipment Corp. of America 1
 Erie Perforating Co. 109
 Erie Machine Shops 95
 Erie Pump & Engine Works 107
 Erie Steel Construction Co. 92
 Ernst & Ernst 1
 Eternit, Inc. 1
 Evans Elevator Equalizer Co. 1
 Excavating Equipment Dealers, Inc. 90

F

Fairbanks, Morse & Co. 1
 Fay, Spofford & Thorndike 29
 Fernholts Machinery Co. 1
 First & Merchants Nat'l Bank of Richmond 1
 Fluke-Carter Const. Co. 28
 Flood & Co., Walter H. 30
 Floyd & Lochridge 29
 Ford, Bacon & Davis 29
 Fort Worth (Texas) Chamber of Commerce 1
 Foster Co., Benjamin 1
 Freeland, Roberts & Co. 28
 Friend & Co. 94
 Froehling & Robertson 30
 Fuller & McClintock 28
 Fuller Lehigh Co. 1

G

Galer Equipment Corp. 1
 Galveston, Texas, City of 34
 Galveston Wharf Co. 34
 Gardner & Howe 28
 Garraway & Co., S. G. 1
 Gay & Co., W. O. 1
 General Electric Co. 1
 General Electric Vapor Lamp Co. 7-8
 General Machine Works 1
 Georgia Creosoting Co. 1
 Georgia Iron Works 107
 Georgia Marble Co. 20
 Georgia Power Co. 115
 Glamorgan Pipe & Fdry. Co. 26
 Golden's Foundry & Machine Co. 107
 Granite City Steel Co. 14
 Grasselli Chemical Co. 18
 Greenpoint Iron & Pipe Co. 88
 Gregory Electric Co. 89
 Greiner & Co., J. E. 28
 Gridley Constr. Co., Lee A. 28
 Grinnell Co., Inc. 1
 Gulf Refining Co. 97
 Gulf States Creosoting Co. 1
 Gulf States Steel Co. 1
 Gunite Concrete & Constr. Co. 20
 Gunite Construction Co. 1

H

Haas Pattern Co., A. W. 1
 Hammond Iron Works 1
 Hancock Bond Co. 79
 Harbison-Walker Refractories Co. 97
 Hardaway Contracting Co. 29

Harnischfeger Corp. 25-26
 Harrington Co. 1
 Harrington & King Perforating Co. 1
 Harrib Engr. Co., C. N. 29
 Harsco Engineering Co. 28
 Hayward Co. 92
 Heath Co., J. S. 1
 Hedges Walsh Weidner Co. 1
 Hedrick, Ira G. 28
 Heise Hotel System 1
 Hendrick Mfg. Co. 109
 Hercules Powder Co. 91
 Herty, Chas. H. 28
 Hill & Griffith Co. 1
 Hills Co., George B. 1
 Hinde & Dauch Paper Co. 21-22
 Hires Turner Glass Co. 40
 Hollowell, Gorham & Co. 30
 Holt Hardwood Co. 1
 Honhorst Co., Jos. 1
 Hood Co., B. Miffin 1
 Hoosier Engineering Co. 29
 Hornbuckle Contracting Co. 28
 Howell Electric Motors Co. 1
 Howerton Engineering Co. 28
 Huber Mfg. Co. 95
 Hudson Pipe & Supply Co. 89
 Huey, S. E. 28
 Hunt Co., Robert W. 30
 Hyatt Roller Bearing Co. 1

I

Industrial Brownhoist Corp. 1
 Industrial Lumber Co. 17
 Ingalls Iron Works Co. 1
 Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works) 1
 International Correspondence School 1
 International Filter Co. 20
 International Harvester Co. of America 24
 Invieta Engineering Co. 28
 Irving Iron Works Co. 1
 I. T. E. Circuit Breaker Co. 5

J

Jacksonville, Fla., City Commission 1
 Jaeger Machine Co. 95
 Janney, Jr., Jos. A. 1
 Jenkins Bros. 6
 Jennings & Co., Floyd 29
 Johnson & Hoehler 90

K

Kaiser Klock Co., L. E. 1
 Kansas City Bridge Co. 28
 Kerlow Steel Flooring Co. 23
 Kiesler Co., Jos. F. 1
 Kinnear Manufacturing Co. 1
 Kirby Lumber Co. 23
 Knowles, Morris, Inc. 28
 Knoxville Iron Co. 107
 Koppel Industrial Car & Equip. Co. 92

L

Lacey & Co., James D. 28-32
 Law & Co., A. M. 80
 Layne & Bowler, Inc. 1
 Leadite Co. 40
 Le Baron, E. T. 1
 Lee Clay Products Co. 26
 Lee, William S. 28
 Leffel & Co., James 1
 Lehigh Portland Cement Co. 112
 Leschen & Sons Rope Co., A. 40
 Lewis & Co., Henry 90
 Lidgerwood Mfg. Co. 1
 Lockwood Greens, Engrs., Inc. 30
 Lombard Iron Works & Supply Co. 1
 Louisiana Corr. Culvert Co. 101
 Louisville Cement Co. 1

Ludlow-Saylor Wire Co.
 Ludlow Valve Mfg. Co.
 Lufkin Rule Co.
 Luitwieler Pumping Engine Co.
 Lunkenheimer Co.
 Lupton's Sons Co., David.

M

MacElwee & Crandall, Inc. 28
 Macon Concrete Roller Co.
 Mahon Co., R. C.
 Main, Chas. T. 28
 Manhattan Perf. Metal Co.
 Manistee Iron Works Co. 107
 Marine Metal & Supply Co. 88
 Maryland Pipe & Steel Corp. 88
 Maryland Trust Co. 79
 McClintic-Marshall Co. 16
 McCrary Co., J. B. 29
 McEverlast, Inc.
 McLanahan and Stone Mch. Co. 109
 Mees & Mees. 29
 Meigs, Bassett & Slaughter.
 Mercantile Trust Co.
 Merchant & Evans Co.
 Merco Nordstrom Valve Co.
 Michaels Art Bronze Co.
 Milburn, Heister & Co. 24
 Milcor Steel Co. 20
 Miller Co. 20
 Milwaukee Electric Crane & Hoist Corp.
 Missouri-Kansas-Texas Lines.
 Missouri Pacific Lines.
 Model Land Co. (Flagler System). 82
 Moeschl-Edwards Corrugating Co.
 Monaghan Mfg. Corp.
 Moore Dry Kiln Co.
 Morgan Construction Co.
 Morris Machine Works. 93
 Mott Core Drilling Co. 30
 Mountain State Steel Foundries. 16
 Moyer Co., Tilghman. 30
 Mueller Co.
 Mullergren, Arthur L. 38
 Mundt & Sons, Chas. 109
 Mundy Hoisting Engine Co., J. S. 92
 Myers & Bro. Co., F. E. 107

N

Nashville Bridge Co. 17
 Nashville Hardwood Flooring Co. 20
 National Blow Pipe & Mfg. Co., Ltd.
 National Cast Iron Pipe Co.
 National Equipment Corp.
 National Paving Brick Mfrs. Asso.
 National Power Show.
 National Traffic Guard Co.
 National Tube Co. 105
 Newport News Shipbuilding & Dry Dock Co.
 Norfolk & Western Railway. 33
 North American Refractories Co.
 Northwest Engineering Co.
 Novo Engine Co.
 Nusbaum & Co., V. M.
 Nutting Truck Co.
 Nuveen & Co., John. 79

O

O'Brien Mehry, Co., The. 89
 Ohio Power Shovel Co.
 Oil City Boiler Works.
 O. K. Clutch & Machinery Co.
 Okonite Co. 4
 Old Dominion Box Co., Inc. 97
 Owen Bucket Co., The. 92
 Owensboro Sewer Pipe Co.

P

Pacific Flush-Tank Co.
 Page Fence Association.
 Pardee, W. W. 88-88
 Patent Scaffolding Co.
 Patterson Co., W. W. 16
 Pennsylvania Drilling Co. 30
 Perry, Buxton, Doane Co. 90
 Phoenix Iron Co., The. 17
 Picard Laboratories, The. 29
 Pipe Railing Constr. Co. 20
 Pittsburgh-Des Moines Steel Co. 111
 Pittsburgh Piping & Equip. Co. 26
 Pittsburgh Testing Laboratory. 30
 Platt Iron Works. 107
 Poe Piping & Heating Co. 24
 Porter Co., H. K.
 Portland Cement Ass'n.
 Power Piping Co. 26
 Preacher & Co., Inc., G. Lloyd. 28
 Progressive Mfg. Co., The.
 Proposal Advertisements. 83 to 85
 Provident Savings Bank & Trust Co. 80

Q

Quincy Compressor Co.
 Quinn Wire & Iron Works.

R

Randle Mehry, Co., The.
 Raymond Bros. Impact Pulv. Co.
 Reading Iron Co. 27
 Rees, S. P. 28
 Republic Rubber Co.
 Republic Steel Corp.
 Resale Dept. 88 to 90
 Richards-Wilcox Mfg. Co.
 Richmond Structural Steel Co. 16
 Riddell Co., W. A. 95
 Ripley Fdry. & Machine Co.
 Roanoke Iron & Bridge Works. 17
 Robert & Co.
 Roberts Filter Mfg. Co. 20
 Robertson Co., H. H.
 Robinson & Orr. 90
 Rockford Power Machinery Co. 89
 Roebeling's Sons Co., John A. 16
 Rowan, W. E.
 Rundle-Spence Mfg. Co.
 Russell, Burdall & Ward Bolt & Nut Co. 13
 Rust Engineering Co. 20-99
 Ryerson & Sons, Inc., Jos. T.

S

Salem Foundry & Machine Works.
 Samler Mehry, & Equip. Co. 90
 Sanderson & Porter. 29
 Saagen Derrick Co.
 Sauerman Bros., Inc. 94
 Savannah Cressoting Co. 101
 Saville, Inc., Allen J. 30
 Scaife & Sons Co., Wm. B. 111
 Schofield's Sons Co., J. S. 111
 Schultz & Son, A. L. 99
 Scofield Engineering Co. 29
 Sebastian Lathe Co. 16
 Seyfert's Sons Co., L. F.
 Shaw Co., B. Russell. 28
 Shore-Line Builders, Inc. 95
 Simmons Inc. & Asso., B. Stanley. 30
 Simplicity System Co.
 Sirrine & Co., J. E. 29-32
 Skinner Bros. Mfg. Co., Inc.
 Sloss-Sheffield Steel & Iron Co. 16
 Smith, Elroy G. 28
 Smith Co., S. Morgan.
 Smith & Son Co., Oscar T.
 Smith & Co., W. M. 89-90
 Snare Corp., Frederick. 30
 Snead Architectural Iron Works.
 Sonneborn Sons, Inc., L. 3
 Southern Drilling Co. 30
 Southern Engineering Co.
 Southern Hotel, The.
 Southern Iron & Equip. Co. 90
 Southern Spindle & Flyer Co.
 Southwestern Laboratories. 30
 Southwestern Sheet Glass Co.
 Spencer, Mrs. Lenora. 87
 Spoon & Lewis. 29
 Sprague & Henwood, Inc. 30
 Spring, Charles Herbert. 29
 Steel and Lebbey. 28
 Steele & Sons, J. C. 30
 Sterling Engine Co.
 Sterling Wheelbarrow Co.
 Stewart & Co., Paul. 89
 Stewart Iron Works Co.
 Stillman and Van Sien, Inc. 29
 Stone & Webster Engineering Corp. 38
 Stonhard Co.
 Strand & Co., N. A.
 Street Bros. Machine Works.
 Stuebner Iron Works, Inc., G. L.
 Sullivan Machinery Co.
 Sweet's Steel Co.
 Swenson Evaporator Co.

T

Table of Contents. 39
 Taylor-Colquitt Co. 101
 Taylor Forge & Pipe Works.
 Taylor Sons Co., Chas. 97
 Taylor, Wilson & Co., Inc. 80
 Tennessee Central Railway.
 Tennessee Coal, Iron & Railroad Co. 12
 Tennessee Machinery Co. 89
 Tennessee Metal Culvert Co. 101
 Texas Power & Light Co.
 Thew Shovel Co., The.
 Thompson & Bros., T. C. 28
 Timken Roller Bearing Co.
 Titus, E. E. 90
 Titusville Iron Works Co.

Trackson Co. 95
 Traylor Engineering & Mfg. Co. 99
 Tucker & Laxton. 29
 Turner, C. A. P. 28

U

Union Steam Pump Co.
 Union Tank & Pipe Co.
 U. S. Pipe & Foundry Co. 77
 Universal Crane Co., The. 116
 Universal Crusher Co. 95
 Universal Power Shovel Co.

V

Veeder-Root Inc.
 Victoria Paper Mills Co.
 Viking Pump Co. 107
 Virginia Bridge & Iron Co. 17
 Virginia Mehry, & Well Co. 107
 Vogt Bros. Mfg. Co. 107
 Vogt Machine Co., Henry. 26

W

Wadleigh & Bailey. 28
 Wales Wood Preserving Co. 101
 Walker Electrical Co. 29
 Wall Mfg. Supply Co., P.
 Warner Service Co. 28
 Webb Electric Co. 30
 Weber Co., F.
 Webster & Weller Mfg. Companies.
 Welded Products Co. of La., Inc.
 Weller & Co. 90
 Western Electric Co. 4
 Western Metal Mfg. Co. 101
 Westinghouse Electric & Mfg. Co.
 Westinghouse Traction Brake Co.
 Wheeler, Walter H. 28
 Whitaker Paper Co. 107
 Whitcomb Co., George D. 92
 White Co., Gilbert C. 28
 White Engineering Corp., The J. G. 29
 Whiting Corp.
 Whitman, Reardon & Smith. 29
 Whitney Metal Tool Co. 28
 Widmer Engineering Co.
 Wiedeman and Singleton, Inc. 29
 Wiley & Co., Inc. 29
 Wiley & Wilson. 29
 Williamson, Lee H. 28
 Wilson Corp., The J. G. 97
 Withers, R. S. 29
 W-K-M Co., Inc.
 Wood & Co., R. D. 26
 Woodhouse Chain Works.
 Wood's Sons Co., T. B.
 Woodstock Slag Corp. 91
 Woolford Wood Tank Mfg. Co., G.

Y

Yoder Co., The.
 Young & Selden Co.
 Youngstown Sheet & Tube Co.

Z

Zelnicker in St. Louis. 89

Advs. marked † not in this issue.
 Advs. marked ‡ appear in first issue of month.
 Advs. marked * appear every other week.

Classified }
 Opportunities } Page 85 to 86

Proposal }
 Advertisements } Pages 83 to 85

Resale }
 Department } Pages 88 to 90 (3-30)

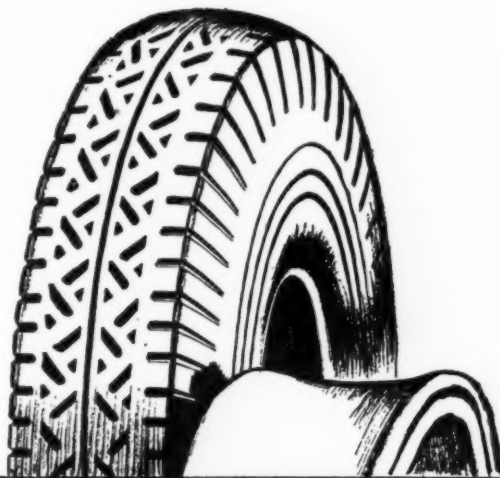
A DAILY LIST OF SOUTHERN BUSINESS OPPORTUNITIES

The DAILY CONSTRUCTION BULLETIN issued each business day by Manufacturers Record gives advance, reliable news covering whatever is being planned or started throughout the sixteen Southern states from Maryland to Texas in the way of industrial development, new construction work, building operations, engineering projects, public improvement work of all kinds, the organization of new firms for every purpose and other important phases of Southern development.

Every firm interested in the great Southern market, will find this service of practical business value in keeping in close touch with sales opportunities.

Sample copies, subscription and advertising rates upon request.

There are good
reasons why
GEORGIA
is becoming
so important
to the



RUBBER INDUSTRY



THE Rubber industry is coming to Georgia as the result of first-hand experience with operations in this state. Tire-fabric production showed the way at first,—and Georgia now produces half the world supply.

Operating these fabric mills, the industry learned the efficiency of Georgia's Anglo-Saxon workers, the economy of low taxes, plentiful power, cheap fuels, low building costs. So when the South became a rich market, and southern volume warranted

branch plants—they began to move into the territory.

The Rubber industry—like such other industries as Clay and Glass, Paper and Pulp, Furniture, Textiles and Full Fashioned Hosiery—may secure detailed data on available locations in Georgia, without charge or obligation. Special engineering surveys have been made, and are offered interested executives by the INDUSTRIAL DEPARTMENT, Georgia Power Company, care Commonwealth & Southern Corporation, 20 Pine street, New York, or Electric building, Atlanta, Ga.

GEORGIA

POWER



COMPANY

INDUSTRY PROSPERS IN GEORGIA

Mobility counts in getting on and off a steel erecting job. Many steel erectors rent Universal machines from local crane service companies.



A Crane that is always loaded and ready to go

THE job may be a half mile away, or 125 miles away... it doesn't make any difference to a Universal Truck Crane... it is always ready to go. No time or expense getting it loaded, no need to dismantle the boom, no time lost to unload... the Universal Truck Crane is ready for instant travel, ready for instant operation the minute it gets to the job.

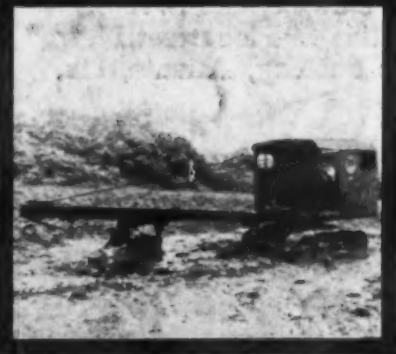
THE UNIVERSAL CRANE COMPANY
Lorain, Ohio

Handling small clamshell excavating jobs with the Universal Truck Crane is cheaper than with crawler cranes, faster than hand labor.

Motor Truck (Christie) Crawler gives the Universal Truck Crane rubber tired speed on pavement, crawler traction anywhere.



UNIVERSAL



Universal machines are transferable to crawler mounting—mounted on the famous Thew 2 Speed Center Drive Crawler.



The Universal 35, 1/2 yd. shovel with Center Drive shovel boom has the greatest reach of any shovel with equal length boom and dipper stick.

Southeast Sales Office:
First National Bank Bldg.,
Atlanta, Ga.

Southwest Sales Office:
1415 Magnolia Bldg.,
Dallas, Texas

